

DECEMBER
1950

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

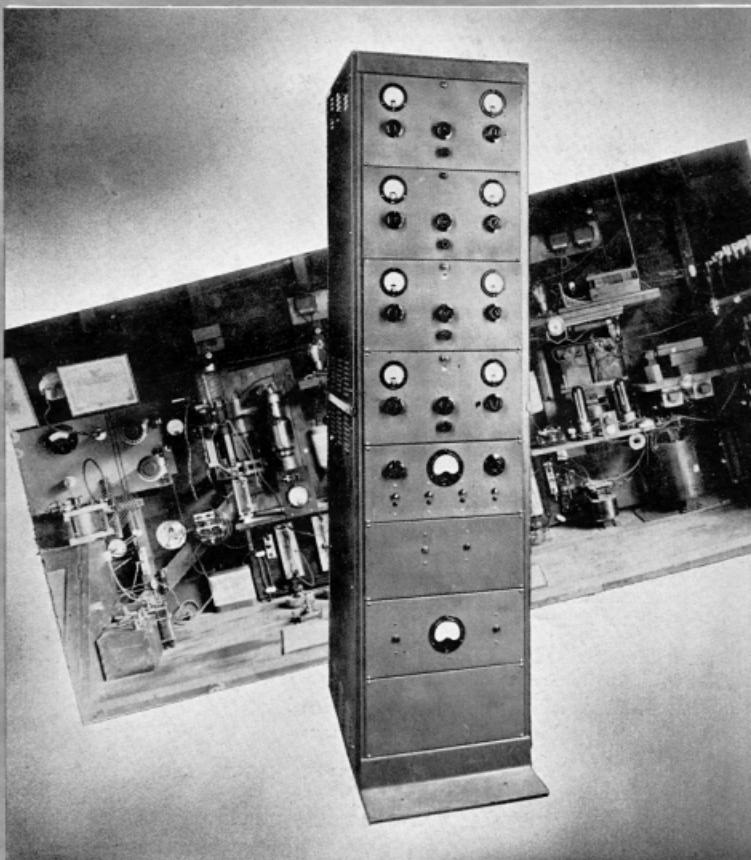
Amateur Radio

VICTORIAN
DIVISION'S
25TH
ANNIVERSARY

For the Experimenter
and Radio Enthusiast

9D.

Registered at the G.P.O., Melbourne, for
transmission by post as a periodical.



PHILIPS congratulate Victorian Division upon 25th Anniversary,

1951 is also the 25th Anniversary of PHILIPS in Australia.

"HAM" RADIO SUPPLIERS

(KEN MILLBOURN, PROP.)

5A Melville Street, Hawthorn, Victoria

(East Kew Tram Passes Corner, opposite Vogue Theatre)

(Phone: Hawthorn 4465)

Please make Money Orders and Postal Notes payable at North Hawthorn Post Office.

BARGAINS — BARGAINS — BARGAINS

BC348 Communication Receiver, crystal filter, 8 meter. Band coverage 200 Kc. to 18 Mc. less the broadcast band. Converted to 6 volt a.c. supply, less power supply. £15

AR8 RECEIVERS, A.W.A., 11 Valves. 150 Kc. to 25 Mc., less Power Supply. Tested and working 100% £20

"Ham Receiver," three bands: 40-20-10 metres. One r.f. stage 6AK5, ECH35 mixer, four i.f.'s back to back, 455 Kc. using 6U7s, 6B6 driver, 6V6 output, 6J7 b.f.o., 6H6 noise limiter, bandspread, Eddystone dial, grey crackle case. Less speaker, complete with internal A.C. Power Supply £22/10/-

AMR300 Communications Receiver, four bands, band-switched, 1.5 to 24 Mc., variable extra filter, nine valves, two r.f. stages, S meter. As new £65

High Frequency Receiver, Australian AR301, uses three 954s, one 995. Six 6AC7 LF. Stages at 30 Mc. Easily converted to 144 Mc. £7/10/- each

SCR522 Transmitter Section, has two tested 832s, modulator two 12A6s Our Price £12/10/-

WANTED TO BUY:

9 or 18 volt input L.F.F. Genemotors for 15/- each

Two stage Transmitter, 25 watts, in small black crackle cabinet. Line-up: 6V6 xtal osc., 807 final, coils for 40, 20, 10 metre bands; modulator, 6J7, 6N7 into 6V6s in push pull; A.C. Power Supply. Metered stages, complete with moving coil microphone £30

Transmitter, English, Wireless type, 36, 50 watt. Three stages: 807 osc. (xtal or v.f.o.), 807 buffer-doubler, pair 807s in final. Modulator: speech amplifier 6C5, 6C5, 6C5 into pair 807s in AB2. Complete with power supply, 110 to 250 volt input, and including Microphone £40

Moving Coil Microphones, with stand £3

Moving Coil Microphones, less stand £2/10/-

Kingsley FM Adaptor, 455 Kc. Transformer, Complete with valves £4

ASSORTED CRYSTALS AVAILABLE FOR ALL BANDS

A.W.A. Radio Compass, 11 valves, Type 1C5852, three bands: 275 to 1700 Kc., 2.3 to 3.3 Mc., 6 to 7 Mc. LF. channel 532.5 Kc. No generator £12/10/-

Super Tester Valve Tester, as new £17/10/-

AT10 plug-in coil units, has two variable condensers (approx. 50 pF.) and two coils. Ideal for wrecking. £1 each.

Packing Charge on all goods over 10 lbs. in weight, 5/- extra.

WE OFFER OUR CONGRATULATIONS TO THE VICTORIAN DIVISION UPON THEIR 25th ANNIVERSARY

WANTED TO BUY—RADIO PARTS, VALVES, TRANSFORMERS, RECEIVERS, TRANSMITTERS, Etc.

Type A Mark 3 Transceiver. 6 volt DC operation. No spares. Nice condition, as traded £12/10/-

Hammarlund plug-in coil units, contains two variable condensers, coil formers, etc. Price £10/10/-

Transmitter, home-built, in black crackle cabinet (small size). Operates on 6 and 80 metre bands; separate Transmitters for each band. 50 Mc. Tx—6N7 xtal osc., 6N7 doubler, 832 final. 3.5 Mc. Tx—6N7 xtal osc., 832 modulator (Heising) complete with AC power supply. Easily converted to DC operation £17/10/-

Tube Special—7193s, 5/- each

0-10 Ma. Pullin Meters, 4 inch, new each 30/-

New Meters—0-500 microamps. £1/2/6

New Meters—0-1 Ma. full scale £1/2/6

New Meters—0-40 0-120 Ma., separate connection £1/2/6

English L.F.F. Units. Tube line-up: two VR135 (high freq. triodes), two VR78 (diodes), four VR65A, Eddystone Butterly Condenser, 1 uF, 1,000 v.w. Block Condenser. Genemotor 11-12 v. input at 3.8 Amp., output 480 v. 40 Ma. Good assorted quantity of Resistors and Condensers, ideal for wrecking, condition as new £2 each

6 feet lengths of $\frac{1}{2}$ inch Co-ax Cable, 72 ohms, with Connectors both ends 3/-

Jumbo 4-Pin Valve Sockets for 211, etc. each 7/6

VALVES, Tested, Out of Disposals Gear

5/- each—Bargain Price—7193, 6H6, 6SH7, 6B5.

10/- each—2X2, 6AG6, 6C8G, 6G6, 6J7G, 6K7, 6N7, 6U7G, 6X5, 12A6, 12AH7, 12C8, 12SG7, 12J5, 879, 1629, 9003, 954, 955, 956, HY615.

10/- each—Metal: 6SC7, 6SF7, 6SR7, 6SS7, 12SK7, 12SR7.

10/- each—Specials (new)—6A6, EBF2, EL3, EF50, 50L6, 25L6, 25Z5.

10/- each—Locktail type: 7H7, 7C5, 7G7, 7Y4, 7E6, 7A8, 7W7, 7N7, 7A4, 7F7, 1299, 1291, 1203A, 1201, 1LD5, 1LN5, 28D7, 35Y4.

15/- each—6SN7, 6SL7.

813, 60/- each. 832, 50/- each.

A large variety of 2 volt Battery Valves are also in stock.

DECEMBER 1950

Vol. 18. No. 12

EDITOR:

T. D. HOGAN, VK3HX,
Telephone: UM 1732.

MANAGING EDITOR:

J. G. MARSLAND, VK3NY.

TECHNICAL EDITOR:

J. C. DUNCAN, VK3VZ.

TECHNICAL STAFF:

A. K. HEAD, VK3AKZ.
L. B. FISHER, VK3AFF.

COMPILATION:

R. W. HIGGINBOTHAM, VK3RN.

CIRCULATION:

I. K. SEWELL, VK3IK.

**ADVERTISING REPRESENTATIVE
FOR VICTORIA:**

W. J. LEWIS,
20 Queen St., Melbourne, C.I.
Telephone: MU 5154.

**ADVERTISING REPRESENTATIVE
FOR N.S.W. AND QUEENSLAND:**

L. W. CRANCH,
Room 302, 17 Bond St., Sydney.
Telephone: BU 3879.

PRINTERS:

"RICHMOND CHRONICLE,"
Shakespeare St., Richmond, E.I.
Telephone: JB 2419.

MSS. and Magazine Correspondence
should be forwarded to the Editor,
"Amateur Radio," Law Court Chambers,
191 Queen St., Melbourne, C.I.,
on or before the 8th of each month.

Subscription rate in Australia is
9/- per annum, in advance (post paid)
and A10/6 in all other countries.

Wireless Institute of Australia
(Victorian Division) Rooms' Tele-
phone is FJ 6997.

AMATEUR RADIO

Published by the Wireless Institute of Australia,
Law Court Chambers, 191 Queen Street,
Melbourne, C.1.

EDITORIAL



Victorian Division's 25th Anniversary

This number of "Amateur Radio" marks the 25th Anniversary of the Victorian Division of the Wireless Institute of Australia. On behalf of this Division, I wish to thank the Federal Executive of our Institute for affording me the privilege of writing this editorial.

In thanking Federal Executive I am reminded of changes which have occurred since 1st December, 1925, when our Victorian Division was incorporated under the Companies Act. In the next few years various commercial journals became in turn the official organ of the Wireless Institute of Australia. October, 1933, saw the first issue of "Amateur Radio," as the official organ of the Victorian Division and of the Royal Air Force Wireless Reserve. The editorial by the President, the late George Thompson, claimed approximately 300 members and three affiliated clubs for Victoria. The Victorian Railways Institute Wireless Club was one of these, as it is today. That issue contained an article by Max Howden, VK3BQ, appropriately entitled "Simple Crystal Control." It was a veritable milestone in Amateur Radio. In November, 1933, the editorial stated that "we have been honoured and are proud to state that this journal is now recognised by the Federal Headquarters as the official organ of the Wireless Institute of Australia."

Subscribers to the Memorandum of Association formally incorporating the Victorian Division of the Wireless Institute of Australia were Maxwell Howden, the late R. M. Dalton, B. J. Masters, Bruce Hardie, and the late K. Love. To these men and others of that time, Victorian Division owes a good deal. We have

benefited not only from their foresight in organisation, but also from their technical ability in the field of Amateur Radio. Their success in the Trans-Pacific Tests of 1923 and in the first transmission of speech to England in 1924 were steps in a series of remarkable developments.

In those 25 years, Amateur Radio has achieved much. The Victorian Division, now consisting of 720 members, is proud that its members have contributed to those achievements, and it is a loyal section of the parent Australian organisation now consisting of 2500 members.

Yes, those 25 years have seen great things in Amateur Radio in our portion of the Ham world, but we must now look forward. What are the grounds for allocation of portion of modern communication channels for the exclusive use of our section of the community, mainly as a hobby? In present times it is understandable that increasing difficulty is experienced by any section in alienating community property for exclusive use of that particular section. Amateur Radio must feel the effect of this trend. What grounds have we to make special claims and what have we to offer in return?

First to mind is the service of Amateur Radio in emergencies. October issue of this magazine contained a letter of thanks to Amateur operators from the Post Master-General for their help in the flood relief in New South Wales. Members will recall similar instances where Amateur Radio has been privileged and able to afford help to the community, and the recent letter from the P.M.G. is very pleasing and reassuring.

(Continued on Page 11)

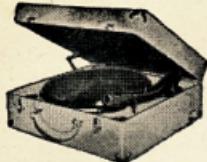
The Contents . . .

"The Quizmaster"	3	Western N.S.W. Amateur Emergency Activity	12
Using Type 19 Genemotor for 12 Volt DC Operation	4	DX Notes by VK4QL	13
Converting ZB2 Homing Adapter for 50 or 144 Mc.	6	Ionospheric Predictions	13
Results of 1949 VK-ZL DX Contest	8	The Ross A. Hull Memorial V.H.F. Contest, 1951	15
14th B.E.R.U. Contests, 1951	9	Fifty Megacycles and Above	15
Our Cover	9	Abstracts, Overseas Magazines	16
Time Marches On	10	Federal, QSL, and Divisional Notes	17
		Correspondence	24

Homecrafts

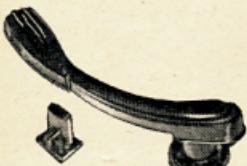
PTK LTD.

Xmas Bargains
For The Radio
Enthusiast



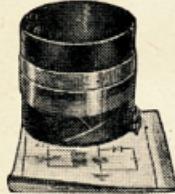
CAPITOL GRAMO. UNIT

Incorporates English Collaro Variable Speed Motor and Pick-Up, in streamlined leatherette carrying case; 12 Gns. Terms: 5/- deposit, 4/3 weekly.



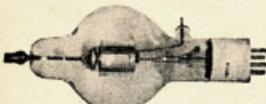
CRYSTAL PICK-UP, BARGAIN

Streamlined plastic lightweight High Fidelity Crystal Pick-Ups with only 1 to 1-1/8 oz. needle pressure. Price, as illustrated, cut to only 29/11.



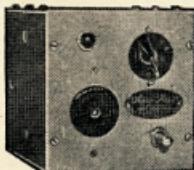
BURON CRYSTAL SET COILS

Complete with circuit diagram, 4/6 each.



SUPER TRANSMITTING TUBE BARGAIN

Brand new American imported Elmac 100TH Tubes. Reduced from 8 Gns. to 49/6.



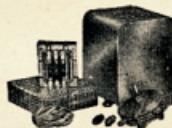
JEWELL AUTO PACK

Enables you to use your ordinary AC Mantel Radio in your car. 6 or 12 volt models complete with instructions, 9 Gns.



THE BYER R33 RECORDER

A complete Portable Recording Studio. Operates on 110 volts, makes special standard recordings, complete with amplifier, microphone and two speakers. Housed in leatherette carrying case. Price, complete, £120. Terms: £25 deposit, 28/- weekly.



BATTERY CHARGER KIT

Kit of parts to build a 6 volt 4 amp. Battery Charger. Kit includes an English Selenium Rectifier, Transformer, black crackle finish case, two terminals, hook-up wire and circuit blue print instruction. 12 volt, 5/- extra. Price, as illustrated, £4/10/-.



MOTOR BARGAIN

Brand new Electric Synchronous Motor. Plays 10 and 12 inch records. Constant speed. Price, 65/6.



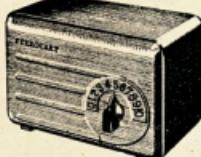
SAPPHIRE GRAMO. NEEDLES

The lowest price quality Sapphire Needle on the market. The English "Ferrocarr" with over 2,000 playings, guaranteed. Trailer type, as illustrated, only 9/9.



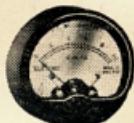
TORCH BARGAIN

Five Cell Focussing Torches. All chrome finish, as illustrated. Case with globe, 19/11. Batteries extra.



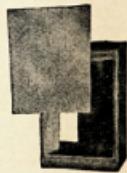
FERROCARR CRYSTAL SET

In streamlined plastic cabinet. Complete with Brown's English Headphones. The Ideal Xmas Gift. Price only 14/12/6.



SUPER METER BARGAIN

English 0-1 DC Milliammeter. Moving Coil 2 inch scale. Meter. Brand new in original carton. Only 29/11.



SMALL INSTRUMENT CABINETS

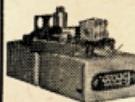
Built with 18 gauge steel. Grey or brown crackle finish. Size 11 x 7 x 3½ inches. 30/- with panel as illustrated. Sloping front type 9 x 8½ x 6½ inches. 24/-.



New Palec Multi-meter, model M30, £12/17/6. Includes sales tax. Terms: 52/- deposit, 4/6 weekly.



New Capitol Microgram; combined high fidelity radio, microphone, speaker, electric motor and pick-up, in smart leatherette carrying case. Price, as illustrated, £25/10/-. Terms: £5/10/- deposit, 8/9 weekly.



Karsen Kit Car Radio Kit as described in "Radio and Hobbies," May, 1949, issue. Kit set complete to the last nut and bolt. Price, including sales tax, 20 Gns.

COUNTRY AND INTERSTATE CLIENTS

PLEASE ADD
FREIGHT OR
POSTAGE.

AIR CORED
465 Kc. I.F.
TRANSFORMERS

Cut to only
2/11 each.



290 LONSDALE STREET, MELBOURNE

Central 4311

"THE QUIZMASTER"

BY C. A. CULLINAN,* VK7XW

"Have your signals that smooth velvety sound that so many young receivers like to caress?"

"Does your beam put out more signal to the rear than the front?"

"Are you having trouble winding coils for that new receiver?"

"If so, friends, listen closely whilst I tell you about utopia. For nothing down and a quid a week for life you can buy . . ." Hold on, looks as though I'm writing a "commercial" so let's get down to business or rather the "Quizmaster" for this little gadget will give you the answer to many of your problems—in Amateur Radio of course.

So we present "The Quizmaster," a multi-purpose instrument with a host of uses.

Fundamentally "The Quizmaster" comprises a meter, a tuned circuit and a power supply that can be switched to any one of the valves to give a—

- Grid Dip Oscillator.
- Good Phone Monitor.
- Field Intensity Meter.

By-products of these functions (as the atomic boys say) enable "The Quizmaster" to be used as a rough checking frequency meter and a good over-modulation monitor as well as many other functions.

Reference to the circuit shows that as a grid dip oscillator, the tuned circuit is connected to a 6V6G oscillator valve, the meter is inserted in the grid circuit and plate voltage is obtained from a regulated supply using a VR150/30.

In the second switch position another 6SN7 is brought into use. The first half of this valve is employed as a diode and is followed by an audio amplifier. The meter is connected into the diode circuit and is used to check over-modulation, as a movement of the meter during modulation indicates carrier shift.

When the selector switch is moved to the third position, a 6SN7 is substituted for the 6V6G oscillator. This 6SN7 acts as a plate detector driving a vacuum tube voltmeter, the meter being connected to the second half of the 6SN7.

"The Quizmaster" is housed in a small metal cabinet, the front panel of which contains the various controls, also a terminal and a co-ax connector.

It will be observed that the coil has a small primary coil, one end of which is earthed, the other end being brought out to the terminal and co-ax connector just mentioned.

The purpose of this duplication is that when used as a monitor a piece of rigid wire can be connected to the terminal in the fashion of a small vertical antenna. On the other hand, when used as a grid dip oscillator, a low impedance link circuit is employed via the co-ax connector.

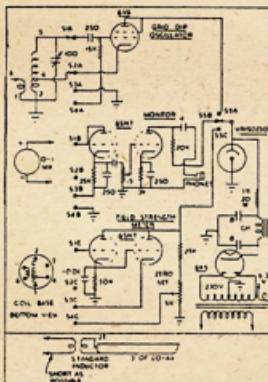
The parts list indicates that the switch must be of the non-shorting type—that is does not short between contacts when being turned. If a shorting type of switch is used, the meter will get banged about during switching unless some means is taken to remove the h.t. voltage.

* 12 Montrose Place, Launceston, Tas.

GRID DIP OSCILLATOR

For use as a grid dip oscillator, the instrument must be calibrated and this can be done in any convenient manner. As "The Quizmaster" is not a precision frequency meter, no attempt has been made to use temperature compensation, etc. However, for grid dip purposes its calibration is sufficiently accurate for Amateur needs—likewise it can be used for approximate frequency measurements. A two-turn coupling coil at the end of a length of co-ax cable or something similar makes a simple job of coupling the oscillator to a tuned circuit under examination.

Care must be taken to avoid mistakes in the dip because of this coupling loop; also the amount of the dip will not be as great as though coupling were made to the main coil. However the link enables one to leave "The Quizmaster" at a suitable spot on the workbench instead of holding it by hand.



CH—Rola 6 hy. choke, 430 ohms.
Switch (S1, S2, S3, S4, S5)—Five pole, three position four bank non-shorting between contacts.

In construction use a cabinet with a hinged lid and arrange the coil so that coupling can be made to it through the open lid to take care of those few odd occasions when the link does not give sufficient dip.

It is obvious that if "The Quizmaster" has been calibrated in terms of frequency, then the frequency of any resonant circuit within its range can be determined.

On the other hand, if one cares to go to the trouble "The Quizmaster" can also be calibrated in terms of capacity and inductance. This is done firstly by using a fixed condenser of known value at the end of the transmission line and placing across it an inductance, then determining the resonant frequency of the combination. From this the value of the inductance can be calculated and marked on the dial. Other coils are

substituted and the process repeated until calibration is complete. Then the process can be revised by using one of the now known values of inductance and substituting various values of capacity to obtain a capacity calibration.

In use, if it is desired to check the value of a condenser, the correct size of "standard inductor" is connected, the unknown condenser is also connected and the capacity read off the dial when the grid dip occurs.

The reverse procedure is used to find the value of an unknown inductance. This is the principle of many of the "inductance-capacity" checkers on the American radio service market. It must be realised that in many cases condensers can be checked in position on a receiver without disconnecting them.

The grid dip oscillator can be used to check aerial systems, but this must be done with discretion as, when so used, "The Quizmaster" is a small transmitter and needless QRM can be created.

PHONE MONITOR

The usual form of station phone monitor consists of a single diode and a pair of headphones, but this system has its drawbacks which "The Quizmaster" removes. Due to the audio amplifier, the coupling to the transmitter is not so critical and a volume control is a convenient method of controlling the volume. In this circuit the meter is in the diode circuit and the coupling to the transmitter should be arranged to give a reasonable deflection on the meter.

During modulation with normal a.m. methods, no movement of this meter should be noticeable. If there is, it will indicate carrier shift which is very undesirable. Carrier shift can be caused by many things, but the two most common causes are over-modulation and poor power supply regulation.

It is not claimed that this monitor will show up all phone faults—hums may not show up due to the poor low frequency response of most headphones, but it will be found more than adequate for the majority of phone monitoring systems, particularly if you have a good recording system to play back to yourself.

FIELD INTENSITY METER

As a field strength meter a small vertical or other aerial is connected to the front panel terminal and the tuned circuit tuned to resonance at the operating frequency. "The Quizmaster" is set up some distance away from the transmitting aerial, and with the transmitter off, the "set zero" knob is adjusted for "0" reading on meter. With the transmitter on, "The Quizmaster" is tuned in exactly and if the meter pointer is hard over, the pick-up aerial is reduced until a desirable reading is obtained. Then without altering "The Quizmaster" or its aerial in any way, any alterations to the main aerial, feeders, coupling and transmitter adjustments will be shown on the meter.

The meter may be calibrated in the following manner. The meter is firstly adjusted to read exactly zero, then the

transmitter is turned on and the pick-up aerial is adjusted to give exactly full scale deflection on the meter, making sure "The Quizmaster" is properly tuned to resonance. Next reduce the power input to the transmitter by exactly half and note "The Quizmaster's" reading. This represents a reduction in signal strength of 3 db. Again reduce power input by half and read the meter. This is another reduction of 3 db or a total of 6 db from full scale reading. The process can be repeated as far as desired.

Alternative calibration can be made by setting the transmitter on one-quarter power and adjusting "The Quizmaster" pick-up aerial to give half scale reading. If then power is doubled, the new meter reading will be +3 db, and if again doubled it will then be +6 db. Likewise powers below quarter power can be used to get drops in strength. Of course in the first case if you want to read + or - against half scale, it's only a matter of labelling the meter case correctly.

It must be remembered that this calibration is arbitrary. If you take the meter along to a friend's shack and he uses different power or a different aerial or you use a different pick-up aerial, you may get more or less indication on the meter, but if you adjust the pick-up aerial so you get full scale deflection irrespective of power, then the meter will read correctly in decibels change.

The meter cannot be calibrated in absolute units of field strength, but only

in change in relative strengths and after all, that's what Hams are most interested in with aerial systems.

In conclusion, "The Quizmaster" is one instrument that remains "put" for its uses are legion and this article merely covers a brief outline of its most important uses towards better Ham Radio.

APPENDIX

The 20 watt resistor in the h.t. B plus line is adjusted so that with either 6SN7 switched in, the current flowing in the VR150/30 is between 25 and 30 Ma., but not over 30 Ma. When the 6V6G is switched in the VR150/30's current will drop to about 5 Ma. The voltage at the output of the VR150/30 will remain at 150 volts.

Due to changes in input impedance between the different circuits, the frequency calibration of the grid dip oscillator will not hold for the other two functions.

The grid dip circuit can also be used as a wavemeter if a switch is arranged to remove the h.t. from the 6V6G, but the field strength position is much more satisfactory.

Standard Inductor No. 1: One open turn of 1/32" thick brass, 2" diameter by 1" wide. This is tightly coupled to the two-turn coupling coil on the end of the co-ax cable.

Standard Inductor No. 2: 4½ turns of 16 gauge B. & S. enamelled wire, 2" diameter tightly coupled to the co-ax coupling loop.

If these are to be regularly used, it is recommended that each be made up with its own co-ax cable, otherwise variation in coupling can cause serious erroneous readings.

Connection to condenser under test is via short pieces of brass which must make good fitting to the condenser being tested.

COIL DATA

No. 1—210 turns No. 32 B. & S. enamelled wire close wound on 1½" diameter. Coupling coil, 30 turns, same wire at earthed end of main coil.—1 millihenry, 500 to 1000 Kc. approx.

No. 2—70 turns No. 32 B. & S. enamelled wire close wound on 1½" diameter. Coupling coil, 7 turns, same wire at earthed end of main coil.—200 microhenries, 1 to 2.5 Mc. approx.

No. 3—38 turns No. 20 B. & S. enamelled wire close wound on 1½" diameter. Coupling coil, 4 turns, same wire wound at earthed end of main coil.—40 microhenries, 2.5 to 5 Mc. approx.

No. 4—14½ turns No. 20 B. & S. enamelled wire close wound on 1½" diameter. Coupling coil, 2 turns, same wire close wound at earthed end of main coil.—10 microhenries, 5-10 Mc. approx.

No. 5—8 turns No. 16 B. & S. enamelled wire close wound on 1½" diameter. Coupling coil, 2 turns, same wire close wound at earthed end of main coil.—2.5 microhenries, 10 to 20 Mc. approx.

Note.—Coils Nos. 1 and 2 are mainly for inductance and capacity checking.

USING TYPE 19 GENEMOTOR FOR 12 VOLT D.C. OPERATION

The above unit has been operating satisfactorily for the last three years and therefore output ratings and modifications carried out here may be of interest.

The unit is compound wound and needs no starter mechanism. The ratings of the two output windings as given on the name plate are correct with 14 volts at the input terminals, viz.: 275 volts (110 Ma.) and 500 volts (50 Ma.). At 12 volts, these drop to 250 and 450 volts respectively. The 250 volt section is adequately filtered for supplying a v.f.o. and low power stages.

The modifications carried out were to remove switch, input and output sockets, and associated wiring, together with the r.f. choke in the negative input lead. Two heavy terminals were fitted in place of the sockets on the front of the case. The negative terminal grounded to case and connected to negative input brushholder by a heavy lead. The positive terminal connects to the Series Field lead through the r.f. choke. Do not connect direct to the brushholder.

Holes may also be cut in the case to allow easy access to the grease nipples on the bearing housings.

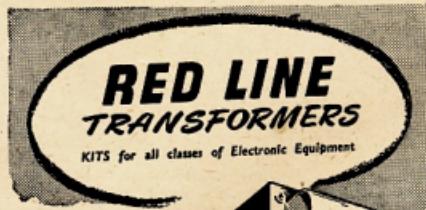
On the output side the negative 250 volt remains as originally connected (to ground). The negative brushholder of the 500 volt winding is connected direct to the positive brushholder of the 250 volt winding, thus placing the two windings in series.

The output voltages are approximately 250 volts and 650 volts on load, with the input current running between 12 and 14 amperes.

This unit is supplying a five stage rig including v.f.o., with an input to the final 807 of 45 watts on c.w. The final voltage (600v.) varies less than 20 volts between key-up and key down. How-

ever, to obtain good regulation, the input leads must be as short as possible and heavy—not less than 7/0.036". At this station, the genemotors are placed as close to the batteries as possible; an automotive horn relay being used to remote control the Type 19.

—J. M. FARRER, VK3DP.



Precision in Design and Construction.

Specialists in design and manufacture of Communication Equipment, Industrial Transformers and Chokes, and Fluorescent Lighting Equipment.

RED LINE EQUIPMENT PTY. LTD.

City Office: 157 Elizabeth St., Melb. MU 6895.

Workshop: 2 Coates Lane, Melb. Central 4773.

DISTRIBUTORS: S.A.—Gerard & Goodman Ltd. N.S.W.—United Radio Distributors Pty. Ltd. Qld.—B. Martin Pty. Ltd., A. E. Harrold, Vic.—All Leading Wholesalers.



TRIMAX TRANSFORMERS

Every Transformer looks to be simply coils of wire on a core, but the beauty of Trimax Transformers is more than skin deep! Long experience and high standards of technical ability ensure that the unseen parts of your Trimax Transformers will prove their reliability in every test.

TRIMAX TRANSFORMERS

Curt and Bunting Pty. Ltd.

CHARLES STREET, NORTH COBURG, MELB., VIC.

QLAND:
Chandlers Pty. Ltd.

N.S.W.:
Radio Equipment Pty. Ltd.
John Martin Pty. Ltd.

TAS.:
W. G. Genders Pty. Ltd.

SOUTH AUS.:
A. G. Healing Ltd.
Gerard and Goodman Pty. Ltd.
Radio Elec. Wholesalers Ltd.

WEST. AUS.:
Nicholsons Ltd.
Atkins (W.A.) Ltd.
Caryle & Co. Ltd.

THE 'R & E' DIGEST OF ★ CIRCUITS

(AUSTRALIAN EDITION)

**ON
SALE
NOW**

The "R. & E. Digest of Circuits" is something that no radio man, whether Serviceman, Ham, or Home Constructor, should be without.

VARIED SUBJECT MATTER.—Circuits will be found in the "Digest" for everything from the simplest Crystal Sets to Eight or Ten Valve Receivers, Oscilloscopes, Audio Amplifiers of varying costs and complexities, and other circuits of special interest to Amateur Transmitters.

BUY YOUR COPY NOW FROM YOUR LOCAL BOOKSELLER.

also obtainable at

McGill's Authorised Newsagency,
183-5 Elizabeth St., Melbourne, Victoria.

Swain & Co. Pty. Ltd.,
119-123 Pitt St., Sydney, New South Wales.

or direct
from

RADIO & ELECTRONICS (N.Z.) Ltd.

(Publishers — Incorporated in New Zealand)

AUSTRALIAN REG. OFFICE: 17 BOND STREET, SYDNEY, N.S.W.
Telephone: BU 3879 Representative: L. W. Cranch, A.M.I.R.E., M.W.I.A. Telegrams & Cables: "Cranlay," Sydney.

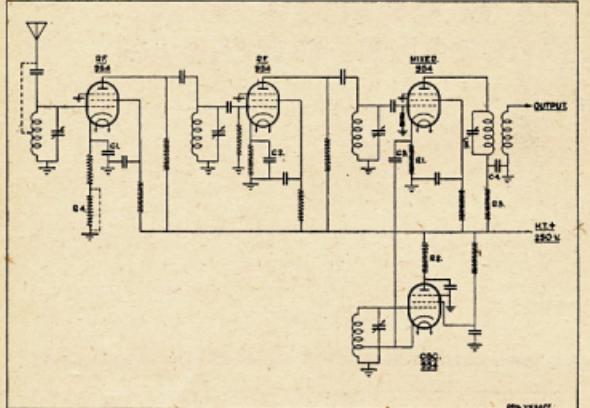
Converting ZB2 Homing Adaptor for 50 or 144 Mc.

50 Mc. Converter

The adaptor in its original state consists of three RF stages using 954 acorn tubes and a detector using another 954. The original frequency band is 234 to 258 Mc., and it should be noted that no oscillator or frequency changer is incorporated. It has been found, however, that it is relatively simple to change the wiring to provide two RF stages, a mixer, and an oscillator, the output of

the converter being on 5 Mc. or on any desired frequency which the individual Ham may prefer. The circuit diagram of the finished converter given herewith should assist one in carrying out the modifications, which are listed, for ease in working.

1. Remove all surplus filament wiring and switch, and wire all filaments in parallel for 6.3v. operation. The adaptor was originally wired for 12 or 24v. and the switch was used to change over



In the schematic diagram the grid condenser and grid resistor to the 954 oscillator were inadvertently omitted, existing components retained.

C1, C2, C4—0.001 uF. condenser.
C3—3.3 pF., lifted from ground.

C5—3/30 pF. trimmer.
R1—100,000 ohm resistor.

R2, R3—30,000 ohm resistor.
R4—100,000 ohm resistor shorted to earth or removed.

Coils—See text.

DECEMBER SPECIALS!

- B/C Aer., RF, and Osc. Coils, 455 Kc. 2/6
- Amphenol Steatite Sockets, 5-pin and Octal 2/6
- Co-ax Connectors, Male and Female 2/6 complete
- Ribbon Microphone and Floor Stand £6/10/-
- Good Stocks of All Dry Batteries for Country Clients.

XMAS SPECIALS FOR JUNIOR!

- ★ Large Stock of English Minic Toys from 3/6 up
- ★ Austin A40 Model Electric Cars, remote steering, using two 935 Cells less Batts. 22/6
- ★ Electric Tug Boats, using 935 Cells less Batts. 22/6

These are the Goods for Junior.

MAIL ORDERS FOR COUNTRY HAMS

M. J. CROMPTON

18 HIGH STREET, GLEN IRIS, VIC.

Phone: WM 6153

from one to the other.

2. Remove plugs Nos. 1 and 3 at rear of unit retaining No. 2 plug as power lifter if desired, and the co-ax connectors as antenna input and if. output.

3. Commencing with the r.f. stage, cut existing coil leaving $\frac{1}{2}$ " to $\frac{3}{4}$ " of wire in position for soldering to new coil. Short grid tap on coil to stator of antenna trimmer. Remove ceramic condenser from stator of antenna trimmer to earth. Take out 10,000 ohm resistor in cathode circuit, leaving 1,000 ohm resistor intact and connect to earth, the junction of these two resistors being originally connected to rear plug by plain white wire, also to be taken out. Add a 0.001 condenser from cathode to earth for additional by-passing, otherwise r.f. stages may oscillate because of the lower frequency.

4. The second r.f. stage remains intact with the exception of an additional 0.001 uF. condenser from cathode to earth and a new tuning coil.

5. Convert third r.f. stage to a mixer stage as follows: Remove plate coupling condenser and 30,000 ohm plate resistor. Remove cathode resistor and re-place with 100,000 ohm, which is the resistor removed from the first r.f. stage. Lift cathode by-pass condenser from earth. This condenser serves as a coupling condenser to oscillator (3.3 pF.).

Quite a number of ZB2 Homing Adaptors have been available on the Disposals market and in response to requests from members, we present herewith a collection of data on the above unit.

The first article we present with due acknowledgement to "Break In," and the latter article to Herb Stevens, VK3JO.

6. Convert detector stage to an oscillator as follows: Grid circuit remains intact. Remove cathode resistor and condenser.

7. In rear compartment remove existing r.f. choke, strip off the old winding and re-wind with 40 turns of 28 s.w.g. or sufficient to reach output frequency should this be other than 5 Mc. After waxing this coil, wind on four turns over the "cold" end, or more, depending on amount of coupling desired to provide connection for low impedance output. Replace what is now the i.f. transformer and connect the "hot" end to "B" positive through a 30,000 ohm resistor and by-pass to earth through a 0.001 uF. condenser. Place a 3-30 pF. trimmer across primary winding. One end of the output coil is earthed and the other end taken to "output" co-ax. connector. Note that "output" connector is next to plug No. 2.

8. The plate of the oscillator tube is connected to "B" positive through 30,000 ohm resistor.

9. Coils. As mentioned for first r.f. stage, all existing coils are clipped off leaving $\frac{1}{2}$ " to $\frac{3}{4}$ " of wire to take new coils.

R.F. coils, 11 turns.

Mixer, 11 turns.

Oscillator 14 turns (tapped at 4 turns from ground end).

All coils are close wound on $\frac{1}{2}$ " diameter former with No. 20 s.w.g. enamelled wire and slid off to leave a self supporting coil.

10. Solder the coils into place to the remaining wires of the original coils. The oscillator coil tap is connected to the cathode of the oscillator tube and also to the mixer tube cathode through the coupling condenser previously mentioned in section 5.

11. If a "grid dip" meter is available, all four circuits may now be lined up, r.f. stages and mixer to 50 Mc. and the oscillator to 45 Mc. (if the i.f. frequency is 5 Mc.), using the original air trimmers. At these frequencies the silvered slugs should be completely withdrawn from the coils. Note that as the slug is inserted into the coil, the inductance is lowered, and the frequency increased.

12. All screen circuits remain intact and are connected to "B" positive by the white wire with an orange stripe, and all plate circuits fed by the white wire with red stripe.

13. The original antenna coupling through the co-ax. connector and line to first r.f. stage remains, also the small ceramic condenser coupling to the grid, or tap in on coil to suit impedance of transmission line.

The coils, as specified, give full band spread from 50 to 54 Mc., but to increase the coverage a smaller diameter coil, having more turns, will be required. The converter is very sensitive and the signal to noise ratio leaves nothing to be desired.

144 Mc. Converter

At the outset it was desired to operate the ZB2 as a converter for 144 Mc., feeding into the Type 3 Mk. II. receiver as a receiving set-up for portable use. Conversion along the lines described above for 50 Mc. should prove equally as satisfactory (provided coils of appropriate size are substituted for those specified) as the conversion method to be described, for the only differences are that the oscillator tube used here is a 955 triode, the injection into the mixer stage is by means of the suppressor grid, and the interstage coupling has been modified slightly to give somewhat better performance.

Conversion of the two r.f. stages is as described above for 50 Mc. All heaters are wired for 6 volt operation, unnecessary by-pass condensers and resistors removed, cathode by-passes increased to 0.001 μ F., screen by-passes (30 pF.) and resistors (0.2 meg.) remain, but the coupling between first and second r.f. stages and second r.f. and mixer stages is altered so that improved coupling is obtained. The grid resistors, 50,000 ohms, are removed, the grids connected directly to the tuned circuits, and the 5 pF. condensers, so gained, connected in parallel with the 5 pF. coupling condensers from the plates of the first and second r.f. stages to the tuned circuits. R.F. chokes were tried in place of the 30,000 ohm plate resistors, but as no improvement was noticed and as it was convenient to operate the unit

from a power supply giving a higher voltage than is recommended for these tubes, the resistors were replaced.

The reasons for the use of the 955 tube as oscillator are twofold: (a) One of the 954 tubes in the unit was found to be defunct, and (b) A 955 reposed in the spare tubes' department. However, getting it going presented one or two difficulties. The circuit used is essentially the same as the above 954 oscillator, the plate of the 955 being fed through a 30,000 ohm resistor, by-passed to chassis with 250 pF., and the cathode tapped up from the "cold" end of the coil. The values of grid condenser and leak are 100 pF. and 20,000 ohms respectively.

Snag number one was in getting the tube to oscillate and was overcome by increasing the value of the plate by-pass from 30 pF. (existing screen by-pass for 954 tube) to 250 pF. as mentioned above. Number two snag was in keeping it oscillating! In order to check that oscillation was occurring (prior to the frequency being corrected) a meter, 0-1 Ma., was connected in series with the grid leak at its earthy end. However, removing the meter leads and connecting the grid leak to earth caused all other symptoms of oscillation to disappear. Putting an r.f. choke (from an I.F.F. unit) in series with the grid leak at its "hot" end and by-passing it with a 30 pF. condenser cured that one.

Injection of oscillator voltage into the suppressor grid of the 954 mixer is accomplished by disconnecting the suppressor grid from the chassis, inserting a 47,000 ohm resistor between these points and then connecting a 5 pF. condenser between the suppressor grid and the "hot" end of the oscillator coil. The plate circuit of the mixer tube is treated as described above for 50 Mc., but the cathode resistor is 10,000 ohms and is by-passed with 0.006 μ F., this value being used because it was the first one to be found in the condenser department. Any good mica condenser whose reactance at the intermediate frequency is

quite low compared with the value of the cathode resistor, should be suitable.

The aerial coupling should be as tight as possible and the actual method will depend largely on the type of feed line used. In this instance, a "Lenfo" beam fed with 300 ohm twin lead is used, so the co-ax antenna lead was dispensed with and the 300 ohm lead, brought in through the top cover plate, is connected directly to a three-turn coil wound over the top of the three-turn grid coil. Some further experimental work here may be beneficial.

All coils are of three turns, approx. $\frac{1}{2}$ " diameter. The cathode tap for the oscillator, which is on the low frequency side of the signal frequency, being at one turn from the "cold" end of the coil. Some adjustments, trimming and certaining of the coils was necessary to line-up and track all circuits, but presented no great difficulties and the hash from a superregen receiver gave a rough alignment, final adjustment of the trimmers being made with the aid of various signals on the band.

At this stage it was noticed that tuning was very sharp and it was necessary to adjust the Type 3 receiver in order to tune signals in at all. In an effort to overcome this, the existing drive arrangement for the tuning slugs was removed and a finely threaded $\frac{1}{2}$ " diameter rod arranged to drive them. Even though the push rod has been spring loaded, back lash is still apparent, but it is possible to tune a signal in without adjusting the tuning of the Type 3 receiver. The band is now covered by about 10 or 12 complete revolutions of the tuning knob, compared with about 230 degrees of rotation with the existing drive arrangement.

Results.—Signals which previously were smothered by hash of the superregen, are now audible and, if crystal controlled, quite readable. If from a mod. osc., they may, or may not, be readable depending on the degree of frequency shift under modulation and

(Continued on Page 14)

DURALUMIN TUBING FOR WIRELESS AERIALS

Stocks Now Available for Immediate Delivery

ALL DIAMETERS $\frac{1}{4}$ " TO $\frac{1}{2}$ " IN WALL GAUGES 16-18-20

Price List on request.

GUNNERSEN ALLEN METALS PTY. LTD.

67 YARRA BANK ROAD, SOUTH MELBOURNE

Phone MX 4621 (5 lines).

Telegrams: "Metals," Melbourne.

RESULTS OF 1949 VK-ZL DX CONTEST

The results of the VK-ZL DX Contest for 1949 are published herewith and although the number of logs submitted locally was not an adequate indication of the activity, the general feeling was that an extra good time was had by all concerned and mention is made of the fact that some very good work was done particularly on the 1f. end of the spectrum.

C.W. SECTION

The winner of the Open Section for c.w. operation was ZL1LMB with a terrific total of 152,847 points in 81 countries, a truly magnificent effort and our congratulations go to him for his effort.

VK2EO made a welcome re-appearance in this Contest and tops the VK end of the scores by a big margin; other State winners were VK3XX, VK4AR, VK5FH, VK6RU, and VK7KB, congratulations to one and all.

Open Section

ZL1LMB	152847	VK4RC	24912
VK2EO	130248	VKTJB	22032
VK2DG	95460	VK3DQ	20664
VK2ZC	85640	VK3JI	18093
VK2RA	83148	VK5OU	17346
VK2TF	69135	ZL1ZAB	11088
VK5FH	62784	VK3PG	9321
VK2JX	62634	VK3ABA	8370
VK3XX	57408	VK5AF	7080
VK6RU	53130	VK3UM	6968
VK7KB	50787	VK5KO	4688
VK3FH	42122	ZL1LQW	3180
VK3XQ	36670	VK2IC	2106
ZL1MQ	28776	VK3TX	1008
VK5RX	28204	VK3EG	1005

14 Mc. Section

VK2DG easily proved the best on the 14 Mc. band and his entry of 430 QSOs in 74 countries for the Contest period was excellent—total 95,460 points. Conditions on this band were good for most of the time but were marred by intermittent bursts of bad key clicks from leading ZL stations which, aided by fortunate skip effect, were not sufficiently prolonged to involve disqualification. Local stations were not exempt from this by any means and it is about time that some of the consistent offenders in this respect took a look at their own signals.

VK2DG	95460	VK5RX	17115
ZL1LMB	80808	VK3DQ	14312
VK2TF	69135	ZL1IMQ	13284
ZL1DV	48216	ZL4BR	11178
VK2ZC	45708	VK4TY	11136
VK7KB	42000	ZL1ZAB	9360
VK2RA	41748	VK5EFM	8502
VK5FH	33462	VKTJL	7800
VK6DX	28204	VK5OU	7650
VK3XX	24948	VK5AF	7080
VK2JX	22755	ZL1JG	3960
VK2OA	21456	VKSYF	2983
VK7JB	19440	VK2IC	2106
VK3PL	19320	ZL1LQW	1848
VK5BO	19320	ZL3SCP	1620
VK3JI	18093	VK5KO	1479
VK3YD	17205	VK3TX	1008

28 Mc. Section

From a VK point of view the 28 Mc. conditions were good over the first half but fairly poor on the latter end. This

did not seem to disturb VK4AP who netted 18792 points in easy style, thus winning the ten metre c.w. section. There was little activity on the 11 metre band.

VK4AP	18792	VK3XX	1365
VK5AE	16416	VK2RA	1008
VK3NM	9792	ZL1IMQ	864
VK3HT	6972	VKTJB	720
VK2AHM	4914	VK2GW	384
ZL1MB	3289	VKTJB	357
VK2JX	3120	VK5OU	231
VK2ZC	2040	ZL1IMQ	162
VK5KO	1479	ZL3AB	81

27 Mc. Section

VK2RA	12
VK2JX	3
VKSEG	3

7 Mc. Section

The 7 Mc. band was wide open for the Hams who wanted to take advantage of it with the result that VK2GW, working here (and on 28 Mc.), had by far the best results of any VK-ZL stations and managed 70 QSOs in 18 countries, and this was good going OM. Congrats!

VK5KO takes the cake for his 80 metre work scoring 96 points with six Europeans and two Ws, and was the only log received. The old reliable VK2RA worked DL1FF on 3.5 Mc., but did not submit it as a log.

Check logs for the c.w. section were received from VK4RF, VK2PV, VK2JQ, VK3JASB, and ZL3GR.

OVERSEAS C.W. SECTION

The following are the results for overseas stations for the bands and/or open sections for which they were entered.

14 Mc. Section

W1RY	4080	OE1AD	1500
W1B1H	1950	OE3CC	870
W1APA	1224	OE5AR	480
W2AIS	3969	OE1KR	144
W3OCU	3090	FA8DA	1458
W3ADZ	1710	VU2MA	60
W3KQD	750	DL1FF	3600
W3CGS	480	DL1XS	1188
W3NCF	468	DL1EN	756
W4LZF	1026	DL1TS	744
W5JDN	2130	DL1DA	594
W5PKF	1080	DL1FI	462
W5JUF	336	DL1EV	135
W6AM	1344	G6XXN	3480
W9AEH	4950	G8KP	1512
W9WEN	936	G5TL	528
W9GDI	1053	GW5SL	3270
W9QLW	63	GM6MRV	420
VE3AMK	408	G14RY	300
ZSSU	504	SM5LL	108
F9BO	1440	SM5TQ	27
F9DW	408	SM3FY	45
F9OL	45	PA0ZL	1134
OE1CD	3000	KP4CC	2220

28 Mc. Section

28 Mc. Section	28 Mc. Section	28 Mc. Section
W1RY	306	ZSSU
W4LZF	234	F9DW
W4EEO	60	OE1CD
W5PKF	231	OE1AD
W6YC	525	OE3CC
W8JFC	420	DL1FF
W8AEH	945	G8KP
W9WEN	12	GW5SL

7 Mc. Section

7 Mc. Section	7 Mc. Section	7 Mc. Section
VK2RA	12	DL1FF
VK2JX	3	DL1FF
VKSEG	3	DL1FF

3.5 Mc. Section

3.5 Mc. Section	3.5 Mc. Section	3.5 Mc. Section
W1RY	9720	DL1EI
W2AIS	3969	DL1GU
W2EMU	1950	DL1FZ
W2EQS	513	G5YV
W3ARK	3120	G8KP
W4KVN	5559	GW5SL
W4LZF	2295	G14RE
W4CYC	1755	SM5WL
W4DRK	234	SM7QY
W5PKF	5184	SM5IZ
W5KCC	3468	PA0ZL
W5JWD	2130	PA0RL
W6AM	1344	PA0QF
W6GPB	1131	KP4KD
W8OCA	2820	KP4JE
W8DAE	696	OK3AL
W8PM	324	OK2MA
W9AEH	16575	OK1KY
W9WEN	1190	OK1XQ
VE3AMK	408	OK1DK
VE3AC5	96	OK1GT
VE1CU	63	ON4AZ
ZSSU	4446	VS1SDZ
F9BO	1440	I1KN
F8TM	630	G6LJ
F9DW	530	CT3AV
OE1CD	4872	TF3ZM
OE1AD	2262	4X4RE
OE3CC	1152	CX3CS
FA8DA	1458	LATY
VU2MA	60	LA2B
VP1AA	720	LA6U
DL1FF	10512	VO6EP
DL1FK	5616	OAJ
DL1KB	4176	O2ZFL
DL1DX	3285	ZS6BJ
DL3DU	1590	

Check logs were received from G3DVM, G3HJK, G6CJ, G8PW, G8LN, V9PG, VE3LJ, PA0UV, SM5HH, OK1BM, WIBOD, WIAB, W4PN, W6BVQ, W6NNV, and W8HA.

PHONE SECTION

Open Section	Open Section	Open Section
ZL4HP	47616	ZL1IMQ
ZL3HC	41760	VK2AMV
VK4KS	38979	VK3WD
VK4IG	135	VK3MX

14 Mc. Section

14 Mc. Section	14 Mc. Section	14 Mc. Section
VK4KS	38979	VK6KW
VR3IG	26790	ZL1IMQ
VK2US	25704	VK3WD
ZL3HC	17820	VK3MX
ZL4HP	12869	

28 Mc. Section

VK5AS	21150	VK6KW	2820
ZL4HP	10875	VK5LC	1035
ZL3HC	4950	ZL1MQ	900
VK6HL	4536		

50 Mc. Section

ZL1MQ was the only station to send in a log for 50 Mc. where he made contact with KH6PP—a fine effort—scoring 3 points.

OVERSEAS PHONE SECTION

Overseas stations have forwarded the following logs:

	14 Mc.	28 Mc.	Open
PK4KS	108	1458	
PK3WH		1431	
PK3MR			3042
VE3AMK	18		
ZSSDS		30	
PY2CK	1140		
F9BO	483		
DLI1FK		1656	
W7KK		163	
W4EEO		72	
G6XN		1539	
OQ5BA		24	
CX2CO		162	
VS1IDZ	1485		
OK1HI		54	
ON4AZ	12		

RECEIVING SECTION**Phone and C.W.**

In both the number of local and overseas entrants there would seem to be a marked lack of entries. So small in fact that there is doubt that this section is worth persevering with.

VK-ZL Section

BERS195, Eric Trebilcock, 184 Osborne Street, Williamstown, W.16, Victoria	137806
M. Phillips, Box 33 Warkworth, North Auckland, N.Z.	5460
F. H. Price, 74 Cleaver St., West Perth	3469
A. Moore, 18 Bourne St., New Farm, Brisbane	606

Overseas Section

OE-196, Richard Payer, P.O. Box Knittelfeld, Austria (QRA as from entry)	2304
OE-059	2094
OE-323	849
OE-314	672
DEM-1687	2685
HB9RSE	66
OK1-1647	465
BRS15822	3888
G. Hoffmann, Frankfurt-Hoechst, Emmerich Josef Str., Germany	6783

I4th B.E.R.U. CONTESTS, 1951

Dates.—Phone: 1700 G.M.T. February 3 to 1700 G.M.T. February 4, 1951. C.W.: 1700 G.M.T. February 24 to 1700 G.M.T. February 25, and 1700 G.M.T. March 3 to 1700 G.M.T. March 4, 1951. Phone and C.W. have Senior (full licensed power); C.W. also has Junior (25 watts maximum).

Bands.—Phone: 14 and 28 Mc. only; a.m. or n.f.m. as permitted. C.W.: 3.5, 7, 14, and 28 Mc.; T9 only.

Open to licenced British subjects in British Commonwealth and British Occupation Forces, being fully paid up members of a recognised Commonwealth Society.

Call.—“CQ BERU” and work Commonwealth Stations. Exchange five- or six-figure serials: RST or RS plus three figure number starting between 001 and 400, and increasing by one each QSO.

Scoring.—Commonwealth is divided into 28 zones as below. Fifteen points for first QSO each zone, fourteen for second, thirteen for third, etc., and one point for fifteenth and further QSOs. Scoring system repeats for each zone and for each band. No QSO with own zone.

Entries.—In form shown appended, with declaration (on sheet 1) and zone score analysis (sheet 2). Paper size, Quarto (8 x 10) or Foolscap (8 x 13), Logs in time order.

Post to R.S.G.B., New Ruskin House, Little Russell Street, London, W.C.1, not later than February 12 (phone), or March 12 (c.w.) to be received by June 4, 1951.

OUR FRONT COVER

Pictured on the front cover is the new transmitter at VK3WI. The background is provided by a photograph of 2CM's transmitter of 25 years ago.

The new VK3WI transmitter as pictured consists: the two lower panels are the main 1,200 volt h.t. supply with the voltmeter in the centre of the top panel. The next panel is the 600 volt minor h.t. supply, bias and filament supply.

The fourth panel contains the relay switching with the control buttons for local control of the transmitter. In the centre of the panel is the minor h.t. voltmeter with the meter switches on either side.

Panels 5, 6, 7, and 8 are the separate finals for each band, the 80 metre final being number 5.

The v.f.o. output feeds via a co-ax line on 3.5 Mc. to an 807 amplifier which drives a pair of 834s in push pull on 80 metres.

When the control panel switch is thrown to 7 Mc., the r.f. from the 3.5 Mc. 807 is directed to the panel above where it is fed into an 807 doubler which in turn feeds a pair of 834s on that band. The same principle is used for the successively higher bands, 14 and 28 Mc.

From the operating desk, band changing is accomplished by simply throwing the appropriate toggle switch for the band required.

This photograph is, of course, only the r.f. section of the complete VK3WI, the audio equipment being housed in a smaller rack.

Unfortunately we were unable to obtain, in time, a description of Charles MacLurcan's (2CM) transmitter, no doubt that will be forthcoming for a future issue.

The Victorian Division wish to express their appreciation to Philips Electrical Industries of Australia Pty. Ltd. for their generous gesture in allowing use of their space on the front cover.

Zones:—

- 1—AP, VU2, 4, 5, V57.
- 2—G, GC, GD, GI, GM, GW.
- 3—D, DZL, MB9.
- 4—MD, ST, MS, MT, ZB.
- 5—MI, ST.
- 6—VE1, 2.
- 7—VE3.
- 8—VE4, 5, 6.
- 9—VE7, 8.
- 10—VK2, 3.
- 11—VKA, 7.
- 12—VK5, 6.
- 13—VPA, VPA.
- 14—VO.
- 15—VP1, 3, 5, 7, 9.
- 16—VP2, 4, 6.
- 17—VP8, VK1.
- 18—VZ1, 2, 4, 5, ZD6.
- 19—VZ2, ZE.
- 20—V08, 9, Z02.
- 21—VZ1, 2, 3, 5, 6, ZK, ZM.
- 22—VSI, 2, 4, 5.
- 23—VZ1.
- 24—V59, MP4.
- 25—ZD1, 2, 3, 4, 7, 8, 9.
- 26—ZL.
- 27—ZSI, 2, 3.
- 28—Z54, 9.

All logs will be acknowledged on receipt. Check logs however small will be gratefully received.

ENTRY, SHEET 1—

B.E.R.U. Contest 1951..... Section

Name (block letters)..... Call

Input power to final stage..... Watts

Aerial Systems.....

(Other station details may be given.)

Declaration.—I hereby certify that my station was operated strictly in accordance with the rules and spirit of this Contest, and I agree that the decision of the Council of the R.S.G.B. shall be final in all cases of dispute.

Date..... Signed.....

Also, if not a member of R.S.G.B.—I hereby certify that at the time of the

ENTRY, SHEET 2—Zone Analysis of Score

Zone	... Mc.	... Mc.	... Mc.
	Contacts	Faults	Contacts
1—AP, VU2, 4, 5, V57			
2—G, GC, GD, GI, GM, GW			
3—D, DZL, MB9			
4—MD, ST, MS, MT, ZB			
Totals			

Log Sheets

Date	G.M.T.	Band	Call	Serial No.	Pts.	Clmd.	(Leave)
				Sent	Rwd.		

TIME MARCHES ON

This, the 25th Anniversary of incorporation of the W.I.A. in Victoria, marks another milestone in its history—but let us not forget "Old Timers" whose efforts 25 and more years ago laid the foundation of the present-day Wireless Institute of Australia, Victorian Division.

It was hoped to be able to give you a complete history of the W.I.A. over this period, but unfortunately many records cannot be found, consequently we have had to rely on information gleamed from those "Old Timers" who are still available. This article will tell, as far as possible the events leading up to, and those Amateurs who took part in the incorporation of the Institute.

Unfortunately, many of those who took part in this great work have "passed on" but their work lives on.

As early as 1900, individual members of our Melbourne community had been laboriously carrying out experiments to disclose fundamental knowledge of the new science. Prominent in those days were Mr. Jenvey who made the first wireless tests with the S.S. "Ophir" when King George V., then Duke of York, visited Australia in 1901.

By 1908 quite a few were working with spark coils as the means of transmitting a signal and with coherers as the means of receiving it. The latter was usually constructed from glass tube, silver rod and filings from a threepenny piece. On reception of the signal the filings cohered, at the same time indicating this fact by a suitable electric sign at the receiving station. An electric bell was usually pressed into service to give the coherer the necessary jar to decohere the filings and make them ready to receive another signal. Reception of each dash or dot involved that whole cycle of operations and placed real limitations on speed of reception. Brass rods—usually curtain rods—formed the basis of much of the apparatus to transmit and to receive radio waves more effectively.

By 1909 crystal detectors appeared instead of coherers. These were of galena or of iron pyrites and many were the favoured methods to get the best results from them—leading to the "cat's whisker" days still outstanding in the memory of anyone connected with radio. A list of names of Amateurs in those days would include Bill Jenvey, Alf Avard, Chas Whitelaw and Stan Hosken.

The next two years were very important to Amateurs for 1910 was marked by an unfortunate incident in the United States where signals from a ship in distress were jammed by an Amateur there. This affected the standing of Amateurs all over the world. However, in 1911, whilst the fight for existence was still on, another experimenter in the United States was the means of saving life at sea. He heard a ship's distress signal and was in fact the only one to do so—which re-established in some part the standing of Amateur Radio.

These years saw the formation of the Wireless Institute of Victoria. The driving force in Melbourne was Walter King Witt. A booklet, dated 1914 (a copy of which is held in the Melbourne Public Library) stated in its Preface that:

"This publication, the first of its kind for Australia, has been compiled from official and other authentic sources in order to fill a long felt want by wireless experimenters, and also to show the public to what extent has been the growth of wireless in Australia during the past three years. It is issued with the hope that it may promote both study and experiment in this most useful branch of science."

The booklet published by the Wireless Institute of Victoria listed office-bearers as under:

President: Vernon Cole, Esq.
Vice-Presidents: W. King Witt, Esq.
F. F. O'Shannessy, Esq.
Council: Douglas Harrison, Esq., Herman Lindow, Esq., John Strickland, Esq., W. Edinacott, Esq.
Hon. Corresponding Secretary: C. R. Dodson, Esq.
Hon. Organising Secretary: John Welch, Esq.
Hon. Treasurer: Angus McGregor, Esq.

Victorian Amateurs, under X call signs, numbered 193, with approximately a similar number for New South Wales, and a few in each of the other States.

Outbreak of the First World War gave Institute members an opportunity of showing the value of their training as Amateurs. Their technical knowledge

McGILL'S (Est. 1860)

OVERSEAS AND LOCAL POPULAR MAGAZINES
OBTAINABLE ON SUBSCRIPTION

AMERICAN . . .

Audio Engineering, £1/16/-; CQ, £1/16/-; Communications (now Television Engineering), £2/2/6; Electronics, £10/-/-; Popular Science, £1/16/-; Popular Mechanics, £2/0/9; QST, £2/9/6; Radio News, £2/5/9; Radio Electronics, £2/2/3; Science Digest, £1/18/6; Science and Mechanics, £1/13/-; U.S. Camera, £1/14/3.

ENGLISH and AUSTRALIAN . . .

Australian Radio World, 16/-; Amateur Radio, 9/-; Electronic Engineering, £1/12/6; Radio and Hobbies, 12/-; Shortwave Magazine, £1/7/6; Wireless World, £1/12/6; Wireless Engineer, £2.

LARGE RANGE OF RADIO BOOKS, STATIONERY AND NOVELS ON DISPLAY

Mail Orders by Return Post.

McGill's Authorised Newsagency

183-185 ELIZABETH STREET, MELBOURNE, C.1, VICTORIA.

(The G.P.O. is opposite)

Phones: M 1475-76-77

was far above the average marine operator (of the time) and after a brief course in code, these men were passed into transports and other vessels in war work.

Return to the peace of 1920 brought severe opposition by the Navy to the re-establishment of the Amateur here. With a supporter in W. M. Hughes, Amateurs at last managed to convince Commander Cresswell on the point. Licences were again issued, but at first were for receiving only. A fee of £2 was charged. This, however, was not without its compensations for it made Amateurs here concentrate thoroughly on the art of reception.

Subsequently, control passed from the Navy to the P.M.G.'s Department under whom Amateur Radio progressed remarkably well. The name of J. Malone, of the Department, must be mentioned here as a staunch supporter of the Amateur cause in these days. Active in reforming the Institute in those early post-war years was Victor Nightingale, ably supported by W. Conroy as Secretary. H. K. Love at that time asserted in arguments for the Amateur cause that they were fully qualified and could, with encouragement, be equipped to give and receive overseas signals—a statement which was subject to a great deal of ridicule from some. However, a committee was appointed to prosecute the idea. It consisted of H. K. Love as chairman, Max Howden, Ross Hull, E. K. Cox, with C. H. Philpott as Secretary. These communicated with the American Radio Amateur organisation and a test was arranged for May 1923.

Publications setting forth Amateur Radio activities in Australia included the "Radio Experimenter"—the official organ of the Wireless Institute of Australia, and also of the Royal Australian Air Force Wireless Reserve. From these journals and from the daily press of the time, one reads of achievements of Amateurs in Victoria in that post-war period. To view Amateur Radio achievements in the right perspective, one should remember that much of the work was done on wave lengths discarded by commercial radio as of no value.

To return to the test arranged for May, 1923, a report by H. K. Love in "Radio Experimenter" told of organised listening watches all over Australia for the Americans. Many stations heard weak c.w., but no stations were logged. Then came May 10 when Ross Hull, 3JU, between 6.30 and 7.40, heard 6CGW calling TJ. On May 17, word perfect messages were received from 6JD and 6KA, 8,000 miles away. Names of Victorian Amateurs in the news in those years have a familiar ring today 3SW, S. Gadsden; 3GB, M. A. Glover; 3BQ, Max Howden; E. H. Cox, 3BD. With these one must mention the New South Wales Amateurs, 2CM, Charles MacLurcan, and P. S. Nolan, 2YI. The four last mentioned were heard in England in 1925 by numerous stations working over the long path and using wave-lengths of 35 to 38 metres. Reception was reported excellent.

FIRST OVERSEAS CONTACT

In 1924, Max Howden, the first Australian Amateur to communicate with England and with America by Morse

code, conducted a test with Mr. Simmonds, 2OD, of Gerrards Cross, London. This included a test with speech, but unfortunately it was spoiled because trouble with equipment intervened. However, Max Howden later distinguished himself as the first Australian to speak to England by radio—an achievement by an Amateur, before commercial radio entered the field.

It was in this very active period that the Wireless Institute of Australia held its first Convention. Its President in 1924 was H. K. Love; Vice-Presidents, Ross A. Hull and Max Howden; Hon. Secretary, T. P. Court; Organising Secretary, B. J. Masters; General Treasurer, C. Short. Affiliated clubs numbered 23, including those at Ballarat and Bendigo. Its meeting place was first at the rooms of Amalgamated Wireless of Australia. Later, meeting place changed to rooms in The Arcade, Prahran. Originally inhabited by pigeons for many years, the rooms were made shipshape by the boys who built their own furniture, cupboards and erected their masts complete with 12 feet spreaders. This antenna system was the sight of the town. Subsequently, a move was made to Kelvin Hall, Collins Place, Melbourne.

In 1924 the Victorian Division of the Wireless Institute held an exhibition of equipment, together with trade exhibits in the Melbourne Town Hall.

1925 was a significant year—a year of development. It was fitting that a great wireless exhibition was held in May of that year at Wirth's Olympia, Melbourne. Jermyn B. Masters, on whose shoulders rested most of the organising of the exhibition, was a prominent member of the Institute whose President at the time was the late H. K. Love. The prize for best complete station was awarded to W. Gadsden, second prize to M. Chaffer. Kew Club won the prize in the club section. No doubt that equipment was liberally strewn with pancake coils, spiderweb coils, home-made grid leaks and with the new triode valve—articles on the four electrode valve appeared in 1924. One should mention in passing the name of P. H. McElroy, Doyen of the Retail Wireless trade in Victoria and a familiar name of Amateurs seeking material to build their own equipment in those days.

Clubs were numerous in those days. Geelong Radio Club distinguished itself by giving the first complete radio religious service in Australia. It was transmitted by the club from the Newtown Church. Records state that the rectifier used one dozen aspro bottles with aluminium and lead strips. Hawthorn, Prahran, Malvern, East Kew, St. Kilda were each represented by radio clubs of the period. It is in that year, also, we read in the daily press signs of things to come—"Amateurs opposed to wave length restrictions." In that year was held the Federal Conference of the Wireless Institute reported in the "Argus" on September 18. Mention of pirates is found in the news, also fading investigations and day and night effects. One must not let the year pass without listing Charles Whitelaw's transmission from Benalla to Pennsylvania—more Amateurs speak to England and to Holland. In that year also were

references to a seemingly incredible fact—that stronger signals were heard at greater distances and so began the piecing together of an interesting story, the results of which many take in a very matter of fact way today.

Whilst 1925 was regarded as a year of development, for much occurred in that year in technical progress, that year also marked the incorporation of the Victorian Division of the Wireless Institute of Australia as a trading body. This step calls to mind the name of J. Malone, at the time Chief Manager Telephones and Wireless in the Postmaster General's Department, and respected among Amateurs for his helpfulness and tolerance.

"Radio Experimenter" of that period records a letter from Mr. Malone advising Amateurs to "put their house in order"—advice which led to the incorporation of the Victorian Division of the Wireless Institute—the twenty-fifth anniversary of which we celebrate this year.

EDITORIAL

(Continued from Page 1)

Secondly, Amateur Radio provides a reservoir of trained personnel for defence purposes, and this must weigh heavily in the scales. These important factors should be sufficient to stimulate each Amateur to maintain his station in such a condition that he can put a satisfactory signal on the air in an emergency, despite continual alterations to equipment.

Thirdly, Amateur Radio has reason to be pleased with its contribution in radio research by pioneering short wave communication and in developing new techniques—antenna systems, selectivity devices, instruments and the like. There is every indication that it will continue to make similar contributions in the future.

But there is another aspect which brings us before the public eye more than these. Do we realise what a wonderfully powerful means we have in our hands to promote friendship and understanding between peoples—not only between different States of our Commonwealth and we need that most certainly—but also between people of other lands? But with that power goes a great responsibility—the responsibility to represent our own folk truly and well to other groups about the world. This to me seems to be the greatest task we have as Amateurs, and it is according to the extent to which we measure up to the standards by which others judge our conduct on the air that the future of Amateur Radio will depend.

In the 25 years of Amateur Radio, marked by this number, we have much to be proud of. What can we make of the next 25 years to ensure that we justify and strengthen the confidence of the authorities which we at present enjoy? Victorian Division, in sharing in the pleasures of twenty-five years of achievement, likewise must share in that responsibility.

G. S. C. SEMMENS (VK3GS),
President, Victorian Division, W.I.A.

Western N.S.W. Amateur Emergency Activity

N.S.W. Amateurs during the last 18 months have been active in many emergencies when flooding in many parts of the State caused loss of life and tremendous damage. Due to the abnormal rains and the resultant saturated ground, run off is practically complete and rivers are still rising very rapidly after rain.

With the summer approaching the position should improve, but during late October the Lachlan River was again flooded and Radio Amateurs in the valley were active assisting to maintain communications in the area.

It was evident by Saturday, 21st October, following heavy rain, that a major flood would occur along the Lachlan. Accordingly Jim Corbin, VK2YC, was requested to contact the authorities and inform them that Amateurs in the Forbes district would be requesting permission to handle emergency traffic within the next 24 hours. The next day with flood waters rising, 300 subscribers to the Forbes telephony exchange had lost communication and the main business portion of the town, the District Hospital and the Police Inspector were out of contact.

After an emergency call, official P.M.G. station VNS was contacted on 7 Mc., and permission was granted to handle urgent telephone messages within in the Forbes area. Local Amateurs were fully equipped with battery operated equipment as the switch gear in the local sub-station was under water, and a temporary one installed, it was considered that a power failure was imminent.

By this stage, Forbes was cut into three "islands" with Bill Kennedy, VK2BT, operating from one, Jim Carr, VK2JV, from the second—the town itself, where he had a runner to the P.O., John Meagher, VK2AMV, from the third, and Hugh Stitt, VK2WH, from outside the town area; all stations handling urgent traffic as required.

The Amateurs were advised that Army "Ducks" had been dispatched for relief in the area and as they had required assistance in the April floods, a continuous watch was manned on the Army frequency of 3380 Kc. They arrived in the small hours and Amateur

assistance was requested. The following morning, 23rd October, VK2AMV obtained permission from VK2AA, P.M.G. station, to co-operate with the Army, and from that date onwards until the departure of the "Ducks" on 28th October, Amateurs were continuously operating on 3380 Kc.

The Hams relayed messages where required and forwarded daily reports to Army H.Q. in Sydney. Later when the "Ducks" were in the Warren area, VK2WH again contacted them and passed further messages to Sydney.

Bands used by the Amateurs during the operation were 3.5, 7, 14 and 50 Mc., plus the Army frequency. Conditions

experienced during the period were extremely poor, influenced no doubt by the Aurora disturbance at the time. C.W. proved a blessing and with it quite a percentage of the traffic could not have been handled.

Amateurs who operated in the Forbes area extend their thanks to the many Amateurs in the State who assisted checking transmissions and band conditions, also the P.M.G. Department for the rapid permission given for operation and the help given by official stations.

These floods were the worst experienced in the history of the valley and the Forbes "Advocate" praised the work of the Radio Amateur.

• It might happen to you so be prepared.

To The Victorian Division of The Wireless Institute of Australia, we extend our Congratulations on the occasion of the 25th Anniversary of its Inauguration.

To Members of the Wireless Institute and to Amateurs everywhere, we extend Hearty Seasonal Greetings.



WE THANK ALL READERS OF THIS MAGAZINE FOR THEIR CO-OPERATION THROUGHOUT THE YEAR AND TRUST THAT WE MAY HAVE THE PRIVILEGE OF SUPPLYING THEM, DURING 1951, THE HIGH QUALITY COMPONENTS OF—

- EDDYSTONE
- BELLING & LEE
- LABGEAR LTD.
- BULGIN & CO.
- ERIE RESISTORS LTD.



WILLIAM WILLIS & CO. PTY. LTD.

428 BOURKE STREET, MELBOURNE, C.I.

Established Over 80 Years.

Phone: MU 2426

DX NOTES BY VK4QL

October produced an even thicker "Ion Curtain" than the previous month. Hard listening to hear the weak signals which did get through was a necessity.

All bands were effected, and to make matters worse, the noise level from static on 3.5 and 7 Mc. prevented listening or operating on those bands for days on end. One notable thing on 14 Mc. was the big changes that took place over a period of 24 hours, and an even bigger change in a week. For example, one week Europe came through until 5.30 p.m. The following week they were non-existent. 28 Mc. showed the same erratic behaviour. Plenty of Asians one night, the next, nil stocks. Europe has been non-existent on 14 Mc. round 6-7 a.m., but North and Central America, with the odd North African, were heard. One morning on a dead band, CR5AC was QSOed at 6.30 a.m. with S7 at both ends. He was just as surprised as I was at the strange conditions. FFJJC was again heard in the same circumstances.

Southern stations seemed to do reasonably well in the VK-ZL Contest, but it was not easy work. ZL1MB did not seem to be "bowling them over" with his usual ease.

PI8BK was QSOed this month. Our QSO was his first on the air and he was going through the usual "jitters" we all go through, but he was not helped by the impatient VKs who kept jamming the QSO. All that I could get as far as

QTH is concerned is: "I am a French soldier in Indo-China, and will write you." He was not heard after the QSO, so probably went for a "quickie" to recover his composure.

The last week-end of the month produced a "black out" on 14 Mc. ZLs blocked the receiver, but the rest of the signals were very weak and were Oceanic only. The band remained dead on Sunday, except for a brief period round 4.30 p.m. to 5.30 p.m., when some very weak DX got through. Since then the noise level has been extremely high, even on 14 Mc. 7 Mc. has been useless, even the VKs being weak and a "hollow" effect on the signal.

I am indebted to 5JE for dope on 7 Mc. in Adelaide. He mainly operates this band, but the band fell away as the month progressed. However, HC2IH showed up on the band one night and by hooking him, 5JE completed his 7 Mc. W.A.C. Strange, but true, he worked FA8BG at 4.30 p.m. on the last Sunday of the DX Contest. Contacts were made with VST and Europe also, so Adelaide produced a W.A.C. in the month for 5JE. He says very good signals came from the States between 5.30 and 7 p.m., then they faded out until 9 p.m., when they returned for a period of an hour. Nothing like that up here. I could not work or hear the South Africans the same as last month. Many thanks Ted. What about somebody else giving me some news, eh?

Listings for the month are not too bad, despite the poor conditions. They are: 28 Mc.—EQ3FM, ZX2EM, ZC6JM, KJ6AL, HS1SS; 14 Mc.—CR5AC (Box 38, Biscau, Portuguese Guineas), FO8AD, IS1AHK, HZ1KE, PK7NL, "3V8BD, VQ8CB, VP2FJ, VP9FT (QSL via the R.S.G.B.), LA2B, ZB2I, HR1DF (Comayagua, Honduras), KS4A1, FKS6AR (Vienna, Austria), ET9X (QSL via the A.R.R.L.), UF6AC, UF6AP, 4X4BR, 4X4CL, 3A2AB, FFJJC, FIBBK, ET6AC, AC4RM. The last named caused quite some consternation on the band the night he appeared. As was expected, everything but the kitchen sink appeared on the band. A VK3 got the honor. He was being pressed for his QTH, when "foney" was transmitted by another VK3, adding that his signal was coming from the South. The signal from AC4RM was quite strong here, but having no beam, I could not check. Anyhow there was a smart exit from the band of the AC4.

QSLs received were C3MY, Formosa; VQ8CB, KV4AU, VR1C, ZB2L, VP6SJ, SP1SJ, UL7AT, YO3GH, YU3FLA.

Trev., 2NS, is bemoaning the fact he cannot get a QSL from VP2, EA8 and AR8, but is still hoping. I am still trying to get a QSL from FO8AC for VK2, VK3 and VK4 contacts.

The Propagation Bulletin for December does not give much hope for good hunting on 14 Mc., but 28 Mc. and 7 Mc. should be better than the month of November.

* The thought for the month: "Population or perish." Use the lower frequency bands more, otherwise we will lose them. They are better for cross town chatter than 14 Mc. anyhow.

IONOSPHERIC PREDICTIONS FOR THE AMATEUR BANDS

DECEMBER, 1950

Nine of the charts, prefixed by the letter "C" for Canberra, refer to forecasts for the South-Eastern Australian States. The remainder, prefixed by the letter "P" for Perth, are for Western Australia.

The Canberra charts refer to the following world zones:

Zone	Region	Terminal
1	Western Europe	London
2	Mediterranean	Cairo
3	N.-West America	San Francisco
3a	N.-East America	New York
4	Central America	Barbados
5	South Africa	Johannesburg
6	Far East	Manila

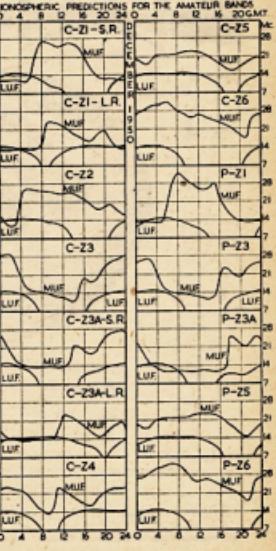
The Perth charts are similar to those based on Canberra.

QUIZ

The Prediction Service welcomes comments on the accuracy of its predictions. In particular, answers to the following questions on the Canberra-San Francisco circuit would be useful:

1. Were good conditions experienced on 7 Mc. for the period 1000 to 2000 hours G.M.T.?
2. Was the 14 Mc. band workable from 0600 to midnight G.M.T.?
3. Was the 28 Mc. band workable from 0200 to 0800 hours G.M.T.?

Answers to the Quiz should be sent to the W.I.A. and should, if possible, refer to consistent results obtained on the majority of days in the months.



DX C.C. LISTING

PHONE

Call	No. Ctrs.	Call	No. Ctrs.
VK3KBZ	1	VK4JP	8
VK3EE	10	VK3AVW	14
VK3EZ	3	VK4WJ	17
VK3EF	1	VK4AJ	13
VK6GRU	2	VK2HJA	18
VK6DD	6	VK4WF	16
VK3LN	11	VK3GG	18
VK4HR	12	VK3IG	5
VK4KS	9	VK3JE	7
	321		100

CW

Call	No. Ctrs.	Call	No. Ctrs.
VK3KBZ	6	VK7LZ	17
VK2E0	2	VK3JE	21
VK3CN	1	VK4HO	13
VK4EL	9	VK2GW	16
VK3ES	12	VK3YD	27
VK3SQL	5	VK3EJ	30
VK3VW	4	VK5BO	32
VK3KB	10	VK5FH	31
VK3SA	28	VK3J1	25
VK4AF	13	VK3J2	29
VK4JRF	11	VK3ATP	14
VK4RU	18	VK3NC	19
VK3EK	3	VK3CX	25
VK3EX	23	VK3OA	32
VK4HJ	12	VK7RK	22
VK4DA	7	VK7LJ	24
VK4DO	21		100

OPEN

Call	No. Ctrs.	Call	No. Ctrs.
VK3KBZ	4	VK5FL	26
VK6GRU	8	VK2ADT	14
VK3EE	1	VK4ADT	21
VK3EZ	1	VK4ZB	16
VK4BR	1	VK2ZB	33
VK3HG	3	VK4WF	40
VK6KW	13	VK2ZG	25
VK3DI	2	VK2YL	11
VK3EF	16	VK2YIM	20
VK4EL	1	VK3J1	33
VK4JRF	10	VK3J2	35
VK4RU	15	VK3ATP	36
VK3MC	5	VK2VN	18
VK4KS	24	VK4UL	27
VK3EX	9	VK2HE	17
VK4HJ	22	VK2YD	30
VK4DA	28	VK3TK	37
VK2ADE	28	VK3TH	103
VK3AHA	9	VK3HO	38
VK3LN	29	VK7RK	31
VK4HJ	16	VK4TVY	35
VK4DO	12	VK3ACX	4
VK7LZ	23	VK7TG	39
	116		100

ZB2 HOMING ADAPTOR

(Continued from Page 7)

the consequent distortion due to the sharpness of the Type 3 receiver. Noise level is quite low, so low in fact that it is a cause for doubt that the converter is working as well as it could be. Stability of the oscillator leaves quite a lot to be desired and the use of such a selective receiver means that these faults become readily apparent. When operating the ZB2 from the Type 3 power supply, the note from the 955 oscillator is about T4-5. R.F. chokes in the heater leads make no difference, but operating it from a separate power supply causes the note to improve to T6-7. Unfortunately, the design of the ZB2 does not allow much scope for experimentation here and so far no further improvement in the note has been possible, though the same tube in a series fed Hartley oscillator does produce a good clean note.

There is a continuous drift in frequency for 15 minutes or so after switch-

ing on and in addition every slight fluctuation in voltage causes the frequency to move. These effects may be overcome by the use of temperature co-efficient condensers and voltage regulator tubes, but to date these have not been tried. As it stands, it has achieved its main purpose—a more effective portable receiver than the superregen. detector.

Since writing the above, the output frequency of the mixer has been altered from 9.7 Mc. to 7 Mc. with a consequent increase in strength of both signals and noise. This confirms that the middle range of the Type 3 Receiver now in use has greater sensitivity than the highest range, and also serves to indicate the desirability of using a highly sensitive receiver in conjunction with the ZB2.

CHANGE OF ADDRESS

W.I.A. members are requested to promptly notify any change of address to their Divisional Secretary, not direct to "Amateur Radio."



The Magazine Committee extends to all members, readers and advertisers a very Happy Xmas and a Bright New Year.

U.C.C. MOVE TO NEW BIGGER PREMISES

Moving an entire factory in three days without serious loss of production calls for first-class organisation. It has been achieved by United Capacitor Co. Pty. Limited.

The Company began on midday Friday, October 20, the move to its own modern factory premises situated at 433 Punchbowl Road, Enfield (LF 3511). The following Monday morning production re-commenced on a worthwhile scale.

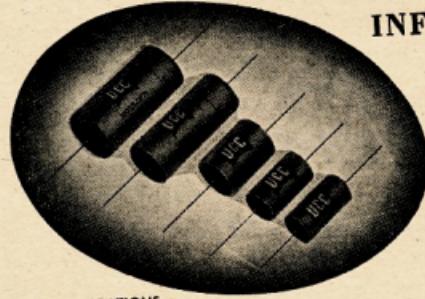
The step is an indication of the progress which U.C.C. has made—progress which is very commendable in view of the Company having been formed just a little over twelve months ago by Tecnico Limited in conjunction with several overseas capacitor manufacturing companies.

Interviewed about the move, Mr. R. V. Bridekirk, Director of United Capacitor Co. Pty. Limited and of Tecnico Limited, dealt with the benefits which the new U.C.C. factory should bring to the radio, electrical, and electronic fields.

"This is an important step in the Company's plan to give the trade an even greater volume and range of capacitors," said Mr. Bridekirk. "The new premises will accommodate special machinery expected shortly from overseas, some of which will produce types of capacitors not previously made in this country. New techniques and processes are being introduced in the extra space now available," added Mr. Bridekirk.

UCC TUBULAR CAPACITORS

INFORMATION BULLETIN



SPECIFICATIONS

- Flash Test—4 times rated working voltage.
- Insulation Resistance—1,000 megohms per mfd. (min.).
- Capacity Tolerance up to .01 mfd. \pm 25%.
Above .01 mfd. \pm 20%.

U.C.C. wax-moulded paper tubular capacitors have very stable characteristics and conservative voltage ratings. They are moulded in high-melting-point synthetic wax designed for minimum moisture penetration. The capacitors are made from aluminium foil for low power factor. Extended life tests show little reduction in insulation resistance when operated at 140° F. at 95% relative humidity.

UNITED CAPACITOR CO. PTY. LIMITED

433 PUNCHBOWL ROAD, ENFIELD, NEW SOUTH WALES
Postal: Box 19, Enfield. Phone: LF 3611

Associated with Tecnico Limited of Australia and Telegraph Condenser Co. Ltd., British Insulated Callender's Cables Ltd., and United Insulator Co. Ltd. of England

65/HPI

FIFTY MEGACYCLES AND ABOVE

Compiled by J. K. RIDGWAY, VK3CR.

STOP PRESS!

As we go to press we have just received news of the first 50 Mc. openings of the season. On Saturday, 11th November, ZL stations worked into VK3, VK6, and VK7. No details are to hand.

On Sunday evening, 12th November, there was a short break between VK4 and VK5. VK4XN was exchanged on 50 Mc., but signals faded after reports were exchanged.

On Monday, 13th November, at 1220 hours, VK4BT was worked by VK3ER at McEne, but once again contact was broken by the sudden closing of the band after a couple of transmissions.

50 Mc. ACTIVITY

NEW SOUTH WALES

The month has seen some country contacts with the city, but most of the activity has been directed to getting going for the 144 Mc. contest. There has been no DX openings.

ZAMP has had his new class B modulator for a 150 Mc. rig, and is very satisfied. John is converting a 2Z2 for 144 Mc. 2ALU and 2ANP have been heard working 2GU in Canberra. 2PN in Tumut has been trying to work through to Sydney. 2DF is putting out a nice call sign on the band. 2AJF has received his old call, 2QZ, back again and has a new rig on the band. 208, of Thornton, has a beam 45 ft high on a new tower, and is putting a good signal into Sydney. 2EW has recently had to change of address, and is currently based mainly on the coast, but with any sign of possible DX he is there. 2AML is a new signal on the band with Dot as second op. This invasion of the v.h.f. bands by VLF and XYLs may cause more use of the 288 and 576 Mc. bands by the misgivings.

SOUTH AUSTRALIA

The highlight of October was the Northern Net Field Day held at Kulpam on the 29th. Ably organized by SUX, the day was a great success. The portable gear was of excellent construction and a new record was set up. 2ALU, 2ANP, 2AJF, 2EF, 2GF, 2KLJ and Joe MacAllister, who went up from the city with v.h.f. gear, 5LH's 50 Mc. converter was the only v.h.f. gear seen amongst the Northern Net members. It was a field day for v.h.f. 5GF made contact with 5QR, 5HD and 5MK in Adelaide

on 50 Mc. and cross-band duplex 50/144 with 5QR (5GF on 144). Reports were that the 144 signals of 5GF were better than the 50 Mc. The field day phone and e.w. contest were both won by 5GF operating 50 Mc. and 144 Mc. and 2EF and 2A.

This only bears out what has been proven before that contact with Adelaide is more reliable on v.h.f.

than on the lower frequencies, and should be remembered for future field days and should encourage

country members to try v.h.f.

5HJ having trouble with feedback troubles, 5PQ going to Lake Creek taking 50 Mc. into account, 5GB, rumour has it, will be heard again soon. George, 5SH heard on 50 Mc. the other night when the band looked like opening. 5MK putting in the loudest signal known to me, 5RQ using 5EF and 5W units to a pair of 15/50 Mc. 2ALU and 2R8 super-regen Rx and a pair RI/L8s in the Tx; reports good results all round the city from Windy Point. 5GL saw his 50 Mc. beam down, but 144 gear is OR. 5QR has been chasing DX on 14 Mc., but will be back on 50 Mc. from now on.

WESTERN AUSTRALIA

Still about the same amount of activity on this band—everyone seems to be waiting for the band to break with the approach of summer. Let's hope conditions are good this year. 6GD has been doing some constructional work and is sports a four foot antenna on the band, and results are very excellent. Has also built the excited about three times in the last month chaser drive, but has sufficient now—when the mains voltage is up. 6GB is very satisfied with his xtal controlled converter for 50 Mc. and is looking forward to the final results. The final result should be very worthwhile. 6FC has been heard back on six after a lengthy absence when his beam was down. Frank may be changing QTH back to the country and we hope he can get us out from time to time to provide another contest report. 6GS still putting out consistent signal into Perth from Harvey (80 miles); has been busy working on some super modulation.

6DW from Bruce Rock is also very consistent over the 150 mds path to Perth. During the end of October he made contacts to 144-8 and 144-10 Mc. and 6GB worked Don under the same conditions for three hours one evening. 6DW has his W.A.S. for six metres confirmed and is the third in VK. Fine work Don. When one considers that every QSO Don has made has been DX and with no local

stations with whom to test gear etc., one realizes just what a fine job Don has been doing up there in Bruce Rock.

6HL has his mobile all band Tx and Rx working well and it does a fine job on this band. While on vacation down at Karrabank, Harry worked 6WG in Albany (35 miles), 6GM in Mandurah to come on six, but was very disappointed up there at present. How many arrays are you going to stack on it George. 6AS finally wound another grid coil for the 815 and finished up with more than enough drive. 6HL has to push the p.t. element a little harder, but at the present time this is probably the best up. 6HR occasionally appears on the band, but is still looking for more drive for the p.p. 807s. 6LM can transmit on six now but needs a 214 or converter to complete the set-up. 6LG and 6HW are very quiet. In OHW's case I think boating (or is it yachting) is a bigger attraction than six metres.

50 Mc. W.A.S.

Certificate Additional
Number Countries

Call	1	..	2
VK3LQ
VK3LRY
VK3GDW
VK4KMR
VK3PG
VK3RR

144 Mc. DOINGS OF THE MONTH

NEW SOUTH WALES

2AMJ caused a stir when she appeared on the band with gear borrowed from 2ALO. 2PU has built a 636 converter for 144 and won't look at a super-regen now. 2CE came on with a 626 mod. with a 214 and 210, and has been working with the Blue Mountains. 2ADT has worked 2LZ, Wentworth Falls for the first time on this band. Jack and 2XY, of Lambton, are keeping mighty sharp. 2LZ is using an 807 tripler to 144 Mc. 2VU, of Sutherland, has been active for two years using CV6s in parallel line oscillator, modulated by 607s and a ten-tube responder unit. Rx. 2ANU is building a stabilised rig with p.p. 7193s in the final. 2GA, of Gosford, has a Rx on the band, and a 3 beam and has worked Sydenham stations cross-band.

2YM brought his portable gear along to 2QZ's one afternoon, but couldn't raise a thing which didn't sound very hopeful to the general use of this band. 2VU, of Sutherland, V.H.F. Section, during the month, 2ABH demonstrated some simple converted L.F. units for beginners on the band and the conditions of the 144 Mc. contest were finally decided upon.

VICTORIA

The V.H.F. Group meets on the third Wednesday of each month at the W.L.A. Rooms at 8 p.m. all interested are welcome. The two main items of interest at the October meeting were the Field Day of 15th October and a lecture on U.H.F. by Mr. G. Jackson, of the University of Melbourne.

10th October, Field Day. The most interesting event of the day was the break through to 7R7 late in the afternoon. Including 7KB, 61 stations on 144 and 50 Mc. participated, 30 of whom were good enough to log in. In VK3, 10 portable units active. 2AGH, Mt. Macedon; 2PA, Yea; 2AK, Barshabrook; 2AJI, Mt. Dandenong; 2AP, Ferntree Gully; 3APF, Shepparton; Goli Linka; 3JO, Arthur's Seat; all on 144 Mc.; 3SW, Mt. Dandenong; 3ED, 3EN and 3QD, Mt. Donna Buang; 3AYJ, Mt. Dandenong. 3ED was generated from the tower of the station at Eastern Hill, and 3AKR joined forces with 2AGD, Dunkeld.

7KB worked 3AKR, 3ED and 3XA on 144 Mc. and 3ED and 3BQ on 50 Mc. He also heard 3EN and 3DA. 3ED and 3BQ were the most easily identified, and remarks that had more use of m.e.w. and m.e.w. been made, more contacts would have been possible.

Mr. G. Jackson, in his lecture on U.H.F., touched on wave problems associated with light-speed tubes, Klystrons, and Magnetrons and the means adopted to produce oscillations at frequencies between 2,300 Mc. and 30,000 Mc. To illustrate his points, he exhibited two cavity resonator oscillators using a 214 Mc. reflex klystron for 9-1/2 megacycles and an eight cavity split mode Magnetron for 10,000 Mc. For researches for this work, he quoted Text Book of Radar, C.S.I.R. Aust., Principle of Radar, M.I.T., and Electronics, Feb. 1946, page 31 to 34. After question had been asked and answered, this meeting received a vote of thanks with acclamation to Mr. Jackson.

2APF was unable to work outside the Shepparton area in spite of "A mighty hot of QSOs." 3AKR and 3ED were lamenting when 7KB broke through and all the beams went in different directions.

Contest Results: Home: Section—1st, 3ED, 34 QSOs; equal 2nd, 3EN and 20 QSOs. Portable Section—1st, 3AKR, 28 QSOs; 2nd, 3ND, 27 QSOs; 3rd, 3ED, 21 QSOs.

Acknowledgments to VK3, 2QZ, 3JO, 3CK and 6AS for the above material.

THE ROSS A. HULL MEMORIAL V.H.F. CONTEST, 1951

The Ross A. Hull Memorial Trophy V.H.F. Contest is a Federal Contest to perpetuate the memory of the late Ross A. Hull whose untimely passing saddened the ranks of Amateurs all over the world. The Contest will be held each year on the 50 Mc. band and the outright winner will hold the trophy until the following year. Certificates will also be awarded to the highest scorers in each State of Australia and each district of New Zealand.

To get this Contest under way for 1950 the N.W.S. Division of the Wireless Institute of Australia are running the Contest on behalf of Federal Executive.

RULES

1. The Contest will commence at midnight E.A.S.T. December 16 and continue through until midnight E.A.S.T. January 7, 1951.

2. Points will be claimed for contacts from home locations using the 50-54 Mc. band.

3. Exchange of RS and RST reports and reference numbers will constitute proof of contact.

5. The serial number of five or six figures will be made up of the RS (telephony) or RST (teletype) reports plus three figures which may commence with any number between 001 and 100 for the first contact and which will increase in value for each subsequent contact. Thus the number chosen for the first contact is 051, then the number for the second contact must be 052, for the third 053 and so on. If any contestant reaches 999, 999 will then start from 001 and continues.

6. Scoring will be as follows:—

Other than VK and ZL .. 10 Points
Interstate .. 1 Point
New Zealand .. 3 Points

PLUS one (1) point for each complete 100 miles of the contact.

Example: VK2 worked VK7, a distance of 630 miles

Contact 1 Point

Distance 600 miles 6 Points

Total 7 Points

Abstracts from Overseas Magazines

"RADIO AND TELEVISION NEWS," JUNE, 1950

P. 40: "A Portable 40 Metre CW Station;" H. C. Gold, W1KUW.—Regenerative receiver, two stage transmitter run from dry batteries.

E. 42: "A 500-Watt RF Amplifier for the Ham;" H. D. Horner, W4KTH.

P. 53: "Simplified Ham TV Station, Part II;" J. R. Popkin-Churman, W2LNP.—Flying spot scanner, pick-up amplifier, blanking and sound circuits.

P. 62: "Mobile Antenna for 75 Metres;" R. W. Jones, W6HJL.—Mobile transceiver loaded whip. Test unit for receiving it exactly.

P. 64: "New Applications for Crystal Diodes."—Germanium rectifiers used for (i) Peak to peak voltmeter rectifier; (ii) Diode modulator for signal generator; (iii) Frequency multiplier (iv) Variable frequency for 2 volt supply; (v) Relaxation oscillator.

P. 75: "Ten KC to 1 Mc. Multivibrator;" G. Dexter.—Dual range multivibrator (10 Kc. or 1 Mc.) locked to 100 Kc. crystal.

"CQ," JUNE, 1950

P. 9: "The Latest Techniques for the Elimination of Ham TV;" P. S. Rand, W1DBM.

P. 15: "A Flea-Powered VFO Rig for 10 Metre Mobile Operation;" G. C. Voyles, W9THD.—6AK5 VFO on 14 Mc., 6CA4 doublet, 6AQ5 final, 6AQ5 modulator.

P. 17: "The Air Force Interest in Sporadic E Ionization;" N. C. Germon.—Contains interesting series of maps showing the appearance, growth and drift of a number of Sporadic E "clouds."

P. 21: "The Musical Hi-Fi Pot;" T. Nicholson, W2CKR.—An effective "compressed" antenna for the low frequency bands.

P. 23: "A Flexible 150 Watt G.F.T. Transmitter;" G. E. Root, W5OPG.—6SK7 v.o., 6PC6 modulator, 6BY6 buffer amplifier, 6V6 power final, 6V6 modulator.

P. 27: "Modifying the BC459 for VTF-Free 40 Metre Operation;" H. S. Brier, W6EQ.—Good hints on converting a Command transmitter for Amateur use. Improved keying, parasitic debugging and harmonic suppression.

"QST," JULY, 1950

P. 11: "An Accessory for C.W. Reception;" G. Grammer, W1DFP.—An audio limiter for saving the earbuds.

P. 14: "All-Driven Arrays;" W. M. Andrew, W3AM.—For 10 and 12 metres, with and without parasitic beams. The article should be read by all things.

P. 18: "An All-Band Crystal-Controlled Exciter;" J. A. Langley, W2CDQ.—6AG7 oscillator, 6L6 buffer-doubler.

P. 20: "Basic Operating Procedures;" R. Goodman, W5DX, Part I. Radio Telegraphy.—Everyone can profit by reading this.

P. 29: "Technical Topics: How to Visualise a Phone Signal?"—Sugar coated discussion on sidebands, modulation s.s.c. and other similar topics.

P. 31: "Radiator Length and the Gamma Match;" P. Morris.—The Gamma match can only increase low s.w.r. if the antenna is tuned to resonance. It appears that the Gamma match is now reactive, i.e., the usual formulae for element lengths apply.

P. 34: "Circuit Design for Link-Coupled Circuits;" K. A. Holden.—Simple method for determining proper circuit constants.

P. 50: "More Effective Speech Amplification;" T. W. Swafford, W5HGQ.—Shaped frequency response plus a.c.g. compression.

P. 56: "Hints and Kinks;" (i) Combined cleat and dipole antenna; (ii) Crystal calibrator and r.f. indicator; (iii) Bandspread for the VTF680; (v) Tapping small coils; (vi) Improved keying for the GFI1 transmitter; (vii) Home-built air dielectric co-axial lines.

"CQ," JULY, 1950

P. 13: "The Low Frequency Discone;" M. Seybold, W2ERYL.—Discone antenna cut for 11 Mc. Gives flat match to 52 ohm co-ax feed from 11 to over 56 Mc.

P. 23: "Under-the-Dash Mobile Transmitter for 75 Metre Phone Operation;" O. M. Lowery, W4MMR.—4CA4 Pierce oscillator, 6AQ5 r.f. final, 6CA4 speech amplifier, 6AQ5 modulator.

P. 29: "The Secret Weapon;" H. J. Hansen, W7MRX.—40 and 80 meter transmitter-receiver in 7 x 7 x 14 inch case.

P. 29: "Increasing the Versatility of the Collins 32V Transmitter;" W. L. Orr, W5SAI.

P. 33: "A Modulator for the Medium-Power Transmitter;" M. P. Johnson.—40 watts of audio from class B 24Gs.

"RADIO AND TELEVISION NEWS," JULY, 1950

P. 23: "Oscilloscope for R.F.;" G. Dexter.—Modulation indicator using 5BP1 without any amplifiers.

P. 48: "A V.T.V.M. for A.C.-D.C. F.T.;" R. P. Turner, K6AI.—Battery operated using 104 volt-meter tube and 1A5 diode rectifier.

P. 46: "Simplified Ham TV Station;" Part 2; J. R. Popkin-Churman, W2LNP.—Describes modulator,

crystal controlled 420 Mc. transmitter, power supplies and receiver.

P. 58: "The 'Sumodget' Transmitter;" M. E. Lovett, W4NNE.—Super-modulation transmitter using two 813s in final.

P. 57: "An Electronic Grid Dip Oscillator;" W. Y. Yuenger, W6IOW.—Covers 1-64 Mc. with plug-in untapped coils. Uses electron eye tube as indicator.

"QST," AUGUST, 1950

P. 11: "Receiver Results on 420 Mc;" E. P. Tilton, W1HDO.—Receiver and transmitter ideas for the u.h.f. experimenter.

P. 16: "Basic Operating Procedures;" E. P. Tilton, W1HDO, Part II. Radio Telegraphy.

P. 19: "A Tunable 75 Meter Mobile Antenna;" C. Buff, W5AIS.—Inductive loading coil in centre of 8 ft. whip.

P. 24: "A Two-Control V.F.O. Rig with Bandpass Exciter, Part I;" C. V. Chambers, W1EJD.—120 watts 8815 v.o., 6CA4 mod. and c.v. to 10 metres. Many ideas for those who like to QSY and jump bands with the minimum of effort.

P. 30: "A Two-Tube Crystal Controlled Converter for 10 Metres;" C. L. Faulkner, W6PFY.—120 watts 8815 v.o., 6CA4 modulator and converter.

P. 32: "A Mobile Converter for 144 Mc;" P. S. Rand, W1DBM.—6AK5 v.o., 6J6 mixer-collimator.

P. 45: "Hints and Kinks;" (i) Adapting the coax s.w.r. meter for 800 cm twin lead. (ii) Audio filter connection. (iii) Home-made insulators from salvaged ceramic gear.

P. 46: "T.A.I. Tips;" (i) High pass filters. (ii) A co-ax filter.

"CQ," AUGUST, 1950

P. 11: "How to Neutralise Your Single Ended Tetra-Grid Fins;" W. E. Root, W5OPG.—Capacity bridge neutralisation for 807, 813, etc., plus a special trick for 813s by using the beam forming plates for neutralising. Same idea can be used to neutralise receiver i.f. stages if they want to take off.

P. 14: "Gain Without Headaches;" C. K. Palmer.—Use of the Wallman cascade circuit.

P. 15: "WE9EGK Built Another Beam;" H. S. Hayes, W2BYF.—Builds a 20 metre and four element 10 metre beam interlaced.

P. 20: "CQ Tests the Lyco Transmitter;" A. E. Hayes, W2BYF.—Comments on commercial 25 watt transmitter, 6AG7 v.o., 6AG7 buffer, 807 final, band switched 160 to 10 metres.

P. 22: "Use Your 304TLs;" E. P. Bonner, W5RCA.

P. 24: "SCR274N Transmitter Modifications;" J. N. Whitaker, W3BFR.—Useful alterations for making present popular disposals items more suitable for amateur operation.

P. 25: "Building a Non-Guyed Steel Tower;" G. Johnson, W7OTL.

P. 31: "Real Audio Selectivity Using Standard Parts;" L. F. Fleming.—Three section LC filter using small power filter chokes.

"RADIO AND TELEVISION NEWS," AUGUST, 1950

P. 29: "Radio Control of Model Boats;" W. L. North, W4GER.—Very simple radio control equipment.

P. 46: "A Simple Noise Limiter;" R. P. Hayland, W1N8A and 0.5 meg. resistor connected across audio load resistor of the second detector.

P. 47: "Voltage Regulator for Higher Efficiency;" J. C. Headley.—Good article on V.R. power supplies.

P. 51: "Comparing Amateur Band Superhet;" R. D. Zimmerman, W7ZMR.—3.5 to 50 Mc. plug-in coils. Twin triode mixer, 1.600 k.c. i.f.

P. 61: "Complete 30 Watt Ham Station;" S. Johnson, W6HV.—Transmitter 6L6 c.o., Receiver 6KS mixer, 6SN7 regen detector and audio.

P. 65: "Home Built 2 Inch Oscilloscope;" J. S. Anderson, W5UFE.—Usual simple c.r.o.

"CQ," SEPTEMBER, 1950

P. 18: "Building and Using the Antennoscope;" W. M. Schever, W2AEF.—The antennoscope can be used to determine antenna resistance and resonance, to match transmission lines for minimum s.w.r., to find receiver input impedance and other r.f. measurements. Consists of a simple resistance bridge and looks an extremely valuable instrument round the shack.

P. 19: "Push-Button Control Circuit;" W. Waite, W5GQD, and G. Grandin, W5AIS.

P. 20: "How to Build an Operating Console;" C. A. West, W5TIG.

P. 24: "Simplicity on Six;" C. O. Bishop, W7HEA.—Good article on how to build a 6V6 pentode-pentagrid with 5B1 type input matching and 5 Mc. i.f. output.

P. 27: "Pi Network Tank Circuits;" E. W. Ferguson, W6SYF, and E. L. Ellipt, W6SQO.—The good oil on the adjustment of pi networks.

P. 34: "Four-Band Mobile Rig;" H. Bumbaugh, W6HI.—Uses 815 final and 813 modulator, covers 80, 40, 20 and 10 metres.

"QST," SEPTEMBER, 1950

P. 11: "Crystal Controlled Converters for V.H.F. Use;" E. P. Tilton, W1HDO, and C. V. Chambers, W1JEQ.—Low noise conversion for 10, 6 and 2 metres using 8815s in push-pull 635 circuit.

P. 17: "The Mountainman's Hiker's Portable;" R. W. Vreeland, W6YBT.—Light weight dry battery 80 metre transmitter-receiver.

P. 20: "Another Inductive Coupling System for Rotator Beams;" R. E. Mumma, W5ORL.

P. 28: "A Simple Voice-Operated Keyer for Automatic Break-In Operation;" J. L. Flanagan, W1ST.

P. 29: "A Two-Control V.F.O. Rig with Bandpass Exciter, Part II;" C. V. Chambers, W1VEQ.

P. 34: "Safety and Convenience in Transmitters;" N. K. Bal, W5PZX.—Classless construction with controls mounted on panels. Panels hinged on track opening forward to allow access from the front of the rack.

P. 38: "A Dual Crystal Q5-er;" R. A. Titt, G3CMJ.—Better selectivity from a two-crystal filter.

P. 40: "Working DX;" B. Goodman, W1DX.

P. 44: "Push-Button Power Control Circuits;" V. W. Hansen, W5FUL.

Low Drift Crystals FOR AMATEUR BANDS

ACCURACY 0.02% OF STATED FREQUENCY

3.5 Mc. and 7 Mc. Unmounted	£2 0 0
Mounted	£2 10 0
12.5 and 14 Mc. Fundamental Crystals, "Low Drift," Mounted only, &.5.	
Spot Frequency Crystals Prices on Application.	
Regrids	£1 0 0

THESE PRICES DO NOT INCLUDE SALES TAX.

MAXWELL HOWDEN
15 CLAREMONT CRES.,
CANTERBURY, E.7,
VICTORIA

FEDERAL, QSL, and



DIVISIONAL NOTES

Federal President: W. R. GRONOW (VK3WG); Federal Secretary: G. M. HULL (VK3ZB), Box 2611W, G.P.O., Melbourne.

NEW SOUTH WALES

President.—J. Corbin, VK2YC.

Secretary.—David H. Duff (VK3EO), Box 1734

G.P.O., Sydney.

Meeting Night.—Fourth Friday of each month at

Science House, corner Gloucester and Essex

Sts., Sydney.

Divisional Sub-Editor.—A. C. Pearce, VK2AHB,

131A Balmain Rd., Leichhardt, N.S.W.

Zone Correspondent.—C. T. Tandyland, J.

Ratcliffe, VK2XO, Raleigh, Newcastle;

H. Whyte, VK3AHA, Vale St., Birmingham

Gardens, Newcastle; Coasfield and Lakes:

H. Hawkins, VK2YL, 27 Comfort Ave., Cessnock;

Western: W. H. Stott, VK2WH, Cum-

bidge, NSW; Northern: R. E. Smith and South-

ern: R. H. Bayar, VK3DO, 45 Petrie St., Yarrawa;

Eastern: D. B. Knock, VK2NO, 45 Yanko Avenue,

Waverley Rd., Sydney; N. J. Cuffe, VE2AM,

1771 Military Rd., North Sydney; G. A. Ackerman,

VK3ALG, 52 Park Rd., Carrington;

South Sydney: V. H. Wilson, VK2SW, Cr. Wil-

son St. and Marine Pde., Maroubra.

VICTORIA

President.—G. S. C. Semmens, VK3GS.

Secretary.—C. Dyer (VK3DY), 19 Collington Ave., Brighton (Xa 6326).

Administrative Secretary.—Mrs. S. May, Law Court Chambers, 191 Queen St., Melbourne, C.I.

Meeting Night.—First Friday of each month at

the Electrical School, Melbourne Technical College.

Zone Correspondent.—Western: G. C. Warner,

VK3YW, 12 Skene St., Stawell; South Western:

K. O'Korke, VK3AKR, Killington, Westmore;

North Eastern: T. K. Tennant, 18 Harold

St., Shepparton; Far North Western: M. Folle,

101 Letitia St., Mildura; Eastern: R. H. Kel-

lis, VK3AEH, Timbarra; North Western: C.

Care, VK3ACE, Cumming Ave., Birchip.

FEDERAL

F.E. DISCUSSIONS WITH P.M.G. DEPARTMENT

Federal Convention items from the 1950 Convention concerning the Postmaster-General's Department have herewith together with the results arising from discussions between Federal Executive and the Department.

Item 27: That representations be made to the P.M.G.'s Department for permission to play back recorded 50 Mc. and higher transmissions on those bands. **Result:** The licensee of any Amateur Station in the Americas will be granted 50 Mc. and upwards record and re-transmit transmissions from other Amateur Wireless Stations operating in these bands. The equipment so employed must be capable of producing recordings of high quality. Requirements to be imposed at the request of an individual station to be limited to 10 minutes in any one day.

Item 28: That representations be made to the P.M.G.'s Department for permission to record by modern techniques transmissions of Amateur Stations and play back over the air on frequencies to be laid down by the Department. **Result:** The Department agreed that the number of stations now operating in the various States to record and re-transmit the emissions from Amateur Wireless Stations operating in the Amateur frequency bands below 50 Mc. shall be increased to 100 for the use of any number of stations in total in New South Wales and Victoria, and 5 in each of the other States. Permits will be issued by each Superintendent to Institute members and non-members in the same proportion as the Amateur Wireless Committee persons in the relevant State. It was also found that the number sufficient non-W.L.A. members that the number concerned in each State desire permission to undertake recordings and re-transmissions of Amateur transmissions in these frequencies may be filled by W.L.A. Institute members who will be appointed by the Superintendent concerned after recommendation by the State body of the Institute.

Item 30: That the P.M.G.'s Department be approached for permission to transmit music on Type A3 stabilised emission for experimental purposes on sections of the 50 Mc. band and higher. **Result:** The Department was unable to accede to the request.

Item 31: That the P.M.G.'s Department be approached with a request that all licensees in the

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI:—Sundays, 1100 hours EST, 7196 Ke. and 2000 hours EST 50 and 144 Mc. No frequency checks available from VK2WI. Intra-State working frequency, 7175 Ke.

VK3WI:—Sundays, 1100 hours EST, simultaneously on 5580 and 7196 Ke. and re-broadcast 50 and 144 Mc. bands. Intra-State working frequency, 7175 Ke. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI:—Sundays, 0900 hours E.S.T. simultaneously on 7196 Ke., 1444 Mc., 52.4 Mc. and 144.138 Mc. Frequency checks are given two nights weekly, and the times are announced during Sunday broadcasts. 7065 Ke. channel is used from 1000 to 1030 hours each Sunday as VK4 query service to VK4WI.

VK5WI:—Sundays, 1000 hours SAST, on 7196 Ke. Frequency checks are given by VK5DW by arrangement only on the 7 and 14 Mc. bands.

VK6WI:—Sunday, 0930 hours WAST, on 7196 Ke. No frequency checks available.

VK7WI:—Sundays at 1000 hours E.S.T. on 7196 Ke. No frequency checks are available.

Northern Territory was allotted the prefix VK8. Result: For reasons previously explained, this request was dismissed.

Item 32: That Federal Executive be asked to endeavour to speed up the allocation of the 21 Mc. band in view of the large amount of commercial interference on the 7 and 14 Mc. bands. **Result:** Pending implementation of the Atlantic City Frequency List, the Department is unable to take action as requested.

Item 33: That Federal Executive approach the P.M.G.'s Department for permission to broadcast from the Institute stations, talks of a technical nature such as those given at monthly meetings. **Result:** As a concession to the granting approval is given for one of the weekly broadcasts in each month to include technical talks, the total duration of which shall not exceed 30 minutes.

Item 35: That the P.M.G.'s Department be approached to extend automatic permission for portable operation to the 27.28 Mc. band. **Result:** For the reasons given to the Institute the Department could not agree. The main reason arises from the discussion between Federal Executive and the Department that the Department feel justified in knowing where and when a portable station is operating should it be necessary for them to contact the station to stop the interference in commercial channels. Despite the fact that operators, under the regulations, must sign their call and location at least once every five minutes, the Department consider that with automatic permission for portable operation it would be difficult

W.I.A. ACTIVITIES CALENDAR

- Dec. 2-3: Fourth All-European DX Competition.
- Dec. 16-Jan. 7: Ross A. Hull Memorial Trophy V.H.F. Contest.
- Dec. 18: Motions for 21st Convention due with Divisional Councils.
- Jan. 12: Convention Motions due in to Federal Executive.
- Jan. 27-28: W.I.A. Nat. Field Day Contest.
- Jan. 31: Membership Roll of each Division due with F.I.C.
- Feb. 3-4: B.E.R.U. Contest—Phone.
- Feb. 24-25: B.E.R.U. Contest—C.W.
- Feb. 28: Convention Per-Capita due with F.E.; end of Fiscal Year of Divisions.
- March 3-4: B.E.R.U. Contest—C.W.

QUEENSLAND

President.—J. F. Pickles, VK4PP.

Secretary.—W. L. Stevens, VK4TB, Box 685J,

G.P.O., Brisbane.

Meeting Night.—Third Friday in each month at the Hotel Victoria, Wickham St., Valley.

Divisional Sub-Editor.—Clive J. Cooke, VK4OC Kurun Street, Cheraside, Brisbane.

SOUTH AUSTRALIA

President.—E. A. Barber, VK3MD.

Secretary.—G. M. Bowen, VK3UX, Box 1234X,

G.O.O., Adelaide.

Meeting Night.—Second Tuesday of each month at 17 Wayman St., Adelaide.

Divisional Sub-Editor.—W. W. Parsons, VK5PS, 483 Esplanade, Henley Beach.

WESTERN AUSTRALIA

President.—R. W. S. Hugo, VK6KW.

Secretary.—W. E. Coxon, VK6AG, 7 Howard St., Perth.

Meeting Place.—Padbury House, Our. St. George's Ter. and King St., Perth.

Meeting Night.—Third Tuesday of each month.

Divisional Sub-Editor.—Alec A. Smith, VK6AS, 75 Weston St., Carlisle, Western Australia.

TASMANIA

President.—J. Brown, VK7BJ.

Secretary.—R. D. O'May, VK7OM, Box 371B,

G.P.O., Hobart.

Meeting Night.—First Wednesday of each month at the Photographic Society's Rooms, 163 Liverpool St., Hobart.

Divisional Sub-Editor.—S. Excell (VK7SJ), 77 Molle Street, Hobart, Tasmania.

Northern Zone Correspondent.—R. H. Kilby, VK7RK, 5 Galvin Street, Launceston.

to police the bands where out-of-band operation or commercial interference may require them to do so. —Federal Secretary.)

Item 36: That representations be made to the P.M.G.'s Department for permission to operate transmitters on mobile portable conditions without a portable license, in any frequency band. **Result:** The Department was unable to accede to the request. (The reasons are in the terms of Item 35 above.)

Item 40: That approval be sought from the P.M.G.'s Department for the use of an identifying signal for emergency and emergency traffic. The signal to have the significance: "I am conducting emergency traffic; please do not cause interference," and that Federal Executive be instructed to give the signal wide publicity. **Result:** The Department did not object to the proposal, but the P.M.G.'s Department did not accept the proposal. Executive to determine what it considers would be a suitable signal and to further discuss the matter with Chief Inspector (Wireless) before introducing the procedure. (Federal Executive requests that members forward suggestions to the Department.) **Divisional Councils:** Considerable difficulty in finding a suitable signal, and to determine whether it would be appropriate and desirable to any other signal used by Commercial Services.)

PERMITS TO RECORD AND RE-PLAY

The following Amateur Wireless Station Licenses in the Southern States have been granted permission to record and re-play transmissions from other Amateur Stations during the twelve months ending 1st September, 1951:—

N.S.W.: No applications received.

Victoria: VK3YM, Dr. E. Marks, Malvern; VK3AB, Mr. L. Morgan, Hawthorn; VK3BU, Mr. W. A. Horsfall, Geelong; VK3BP, Mr. H. S. Fuller, Warrnambool; VK3TA, Mr. B. V. Hardinge, Horsham.

Queensland: No applications were received.

South Australia: VK3VH, Mr. C. Tilbrook, Colonel Light Gardens; VK3LK, Mr. Holstein, Unley Park.

Western Australia: VK6KW, Mr. R. W. S. Hugo, Subiaco; VK6JS, Mr. J. Squires, Subiaco.

Tasmania: No applications were received.

APPLICANTS FOR DX C.C. PLEASE NOTE

Proprietary members of the DX C.C. Manager that the cards submitted to the DX C.C. Manager for checking are to be in alphabetical order of COUNTRIES. A list in the above order showing call sign of station worked, date, frequency, and type of transmission must also be submitted.

SUCCESSFUL A.O.C.P. CANDIDATES

The following is a list of candidates who were successful at the examination for the Amateur Operator's Certificate of Proficiency held on Tuesday, 10th October, 1950:

New South Wales:

Aaspery, R. J., 126 Charles Street, Ryde.
Dunford, R. G., John Street, Coonabarabran.
Hanson, N. A., Ryan Avenue, West Kempsey.
Nowill, E. W., 101 Orman Street, Hurstville Park.
Rushby, S. W., c/o Mr. P. Cracknell, Lamadane Street, Picton.
Shearmen, I. A., 182 Douglas Street, Stockton.
Smith, R. E., Cr. Gipps and Cobbs Streets, Dubbo.
Tavares, P. A., 39 Prints Street, Randwick.
Taylor, W. D., 14 Forster Street, Stockton.
Thomas, B. W., 2 Havilah Avenue, Wahroonga.

Victoria:

Akram, M., R.A.A.F. Air Ground Radio School,
R.A.A.F. Ballarat.
Barrett, J. H., 100 Victoria Street, Middle Brighton, 8.6.
Capron, R. F., 12 Roosevelt Court, E. Brighton, 8.6.
Cations, J. R., 14 Francis Street, Werribee.
Collins, M. A. L., 18 Natimuk Road, Horsham.
Lawless, L. E., 12 Hall Street, West Horsham.
McNabb, R. L., Newstead.
Power, J. H., "The Shack," Birdwoodon via Mildura.

Queensland:

Atkinson, J. A., Cr. Meads and Western Streets,
Wanda, Rockhampton.
Greenwood, R. H., c/o Department of Works and
Housing, Box 256, Rockhampton.
Weatherley, H. J., East Street, Clifton.

South Australia:

Caldwell, W. C., N.T. Room 88, Sqn. Milto, Darwin.
Corker, R. W., 101 St. Leonards, Darwin.
Dove, M. R., 80 Alexandria Street, Prospect.
Neal, J. B., 9 Deacon Avenue, Marleston.
Schilz, D. F., 44 Janet Street, Maryland.
Smith, B. C. W., 22 Jervois Street, Torrensville.

Western Australia:

Dowsett, H. R., 30 View Street, Albany.

Tasmania:

Kirmsse, A. G., Flat 5, 10 Frederick St., Launceston.

ADDITIONS, ALTERATIONS, AND DELETIONS TO AMATEUR CALL SIGNS—OCTOBER, 1950

Additions—

VK2HM—R. S. Sargent, 98 Willison Rd., Carlton.
ZACK—J. A. McCay, "Alray," Boundary St.,
Tweed Heads.
ZAQR—H. F. Powell, 15 Stewart St., Artarmon.
ZASA—A. A. Symons, 33 Edens St., Alindie,
A.C.T.
ZATE—R. Barber, 41 Hamilton St., Lane Cove.
ZAVS—R. T. Southwood, 183 Liverpool St.,
Sydney.
ZAWY—D. O. Yates, 25 Thomas St., Orange.
ZAXM—W. A. McDowell, 133 Maithland Rd.,
Mayfield, Newcastle.

VK8ADD—D. G. Dunstall, 11 Chausier St., Moonee
Ponds.
ZAAE—C. B. Edmunds, Golden Vein, Willow
marsh.
ZAHH—J. Albrecht, 10 Belgrave Ave., Box
Hill North.

VK4JG—J. J. Gallagher, c/o Radio Station 4CA,
Cairns.
4LA—G. Smith, Wallaroo Road, Amberley.
4PT—C. R. J. Paton, 3 Jennings St., Toowoomba.

VK5HE—H. V. Eastwood, 23 South Pde., Darlington.
5IM—C. W. Meech, R.A.A.F. Station, Darwin.

VEGBS—B. H. Smith, Avon 14041 or 19400,
Mannering.
6JA—J. A. Cook, 70 Angels St., South Perth.

VKUNY—J. M. Harrison, c/o A.W.A. Ltd., Aviation
Service Depot (Aerorome), Lae, T.N.G.).

Alterations—

VK2HF—99 Stevenson Street, Birrong.
2MB—51 Watson Street, Bondi.
2XS—99 Spotforth Street, Cremorne.
2ADS—9 Timmins St., Birrington Gardens.
2AEI—"Rothsay," 147 William Street, Young.
2AFI—"Forest Glade," Terolite Ave., St. Ives.
2LA—220 Pitt Rd., Sydney, Signalsights.
2AGZ—9 Pleasant Ave., Wollongong.
2AKT—5 Elimatic Rd., Mona Vale.
2ALG—Bourke Street, Parramatta.
2AMM—100 Crown Street, Wollongong.
2ANC—Post Office Road, Darlingford.
2ANO—6 Gore Street, Arndell.
2ARE—152 Eastern Valley Way, Castlecrag.
2AVO—8 Smith Street, Wollongong.

VK3SQ—23 Jordon Street, Malvern.
3TY—c/o. 2TR, Sale.
3TZ—c/o. Coles Pharmacy, 96 Main St., Stawell.
S2O—Fist 7, 40 Manningham St., Parkville.
SAGT—33 Deakin St., Essendon West.
SAJE—J. Zarth, 445 Waverley Rd., North
Carine.
SABW—56 Bell Street, Preston.
VK4MC—Cr. Sandgate Road and Eton St., Nunawading.
4OA—2 Liley Street, Toowomba.
4SV—34 Jameson Street, Bulimba.
VK3CH—31 Kitchener Street, Kilburn.
5EBC—56 Melville Ter., Whyside (P.O. Box 107).
5KB—D.C. 100, 1000 Kilburn.
3KU—Shepherdson Road, Mount Gambier.
VK6BP—23 Grand Promenade, Baywater.
.6FL—"Hillcrest," Gooseberry Hill.

Deletions—

VK3HE—Cancelled.
2AIX—Cancelled.
2ANY—Cancelled, now operating under VK9NY.
2ARS—Cancelled, now operating under VK2ACK.
VK5ACP—Cancelled, now operating under VK2ACK.
VK4RC—Cancelled.
4SJ—Cancelled, now operating under VR2AYV.
4WY—Cancelled, now operating under VK3AWY.
VK5QL—Cancelled.
BSA—Cancelled, now operating under VK2ASA.

FEDERAL QSL BUREAU

RAY JONES, VK3PJ, MANAGER

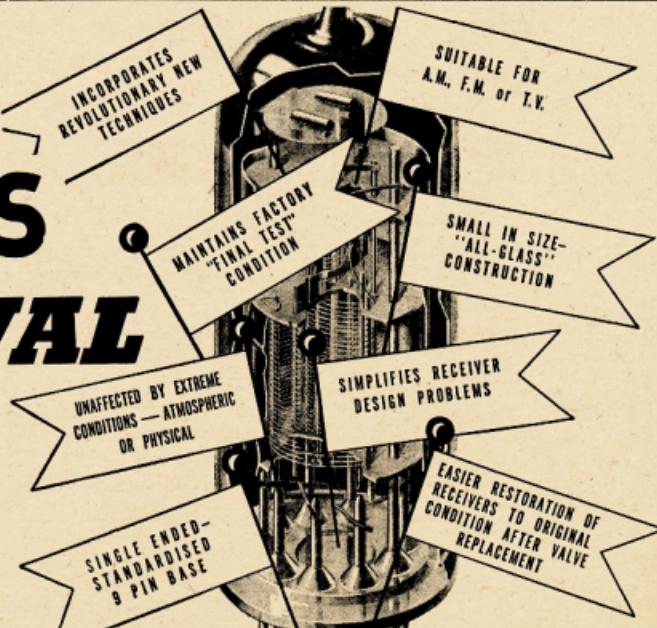
And yet another for the certificate hunters. The A.R.A.L.—The Association of Radio Amateurs of the Las Villas of Cuban Radio, have decided to allow foreign Amateurs who have worked the eight radio districts of Cuba. The QSO may be in c.w. or phone on any band, and s.w.l.'s may also claim the award. Forward your eight QSLs to Box 126, San Cristobal, Cuba. The eight districts are as follows: Pinar del Rio, City of Havana, Province of Havana, Isle de Pines, Province of Matanzas, Province of Las Villas, Province of Camaguey, and Province of Oriente. Stations signing CO work c.w. and phone on all bands. (Cuba) Stations signing CM work c.w. on all bands, but phone only on 16 Mc. (Class C); CM9 is not a district. It is a prefix allotted for purely experimental work.



Throughout the world
this symbol guides the
Choice of Millions.

PHILIPS INNOVAL

BEST FOR ALL
ELECTRONIC
APPLICATIONS



to move to Charlestown very soon; what about coming to our meeting and meet the gang.

Up at Maitland, 2XB now has his emergency rig, the 1196, going very well. He says he really did not expect to come in all accounts. The November sked of the emergency net went off OK, DX hounds, 2DG, went into the contest, too, finishing up with a good score. 2ANL is now active on 6-10-20-40-80 using 2W7A, signal strength 100% on 20. Newcastle, 2ANU hopes to get going on 2 soon, meanwhile, is doing very well on 6 with an S8 signal in Newcastle using flea power. 2TY has a private line to KHE on 10, having had over 100 QSOs with one particular RHE. 2ANL seems to be active on 10, but does well on that band. 2ARF at East Maitland is very QRL, but hopes to get on 6 shortly. 2AAH exchanged a few numbers in the "Scramble." A very merry Xmas to all W.L.A. members from the Hunter Branch boys.

CALIFORNIA AND LAKES

Most interest during the past month was centred around the Hunter Branch "Scramble," many stations in the zone took part. Many a story will be told of the way the ads were sent in, the care taken to the senders, and put up good scores. 20S, 2YL and 2ADT worked every possible 50 Mc. station in the contest. 2ADT was the only station to concentrate on 144 Mc. work and had contacts with seven stations in Singleton, New South Wales. Contact and exchange 2YL finally made 20 metres by contacting 2ADT using a four element beam. 2KF has an 807 tripling to 144 Mc., goes quite well with 400W, at 60 Ma. 2KZ rescued him 2 after an absence of about six months, while 2PZ made time to have a QSO.

2AU still doing remarkably well with his 4 watts, had several 50 Mc. test contacts, at present is building up 2 metre gear. 2VU is one of the consistant ones on 6 and looking forward to the summer before DX breaks. 2KP putting out a consistent sig on 2, 6 and 10. Watch out for wire entanglements if you visit Bob; admitted to 2YD that he couldn't move for wires. Only heard 2YD on 10. 2PZ taking a break now, working over 40, 475 of the lower frequencies. 2AEL at present not active. 2YL works all bands a little and has got himself on 2; works 2ADT with a dipole in a shack. 2GA has found on 2 and 6 has a good sig on 6, 10 and 20. In the Coffs Harbour area to lay low waiting to pounce on any 6 DX that may show up. 2KR also going on 6, working his locals, but not heard here on Coalfields.

WESTERN ZONE

With the floods out west, the members of the zone have been busy in emergency work. Zone Officer, 2WH, is isolated once again—no mail—for about the twentieth time this year in Orange. 2AEL has had a bit of trouble with 6 and 21W, seems a month ago 144 is blinding and calling, but no results. Lost his 144 beam in a blow and will be on 6 soon. In the Blue Mountains, stations are not very active. 2LY specialising in 10s, the line-up at present is 120, 122, 123, 124, 125, machine gunning. Phillips No. 4, revolution set, 1.2 Mc. HRO 190 Ke. to 30 Mc., and S27 to 145 Mc., and an ASV Rx for 144 Mc.—just the bare five; Stan's 30 foot telegraph pole for 6 hours went up recently. 2ARF is on 10, 2YL both. Always active on 20 and 40 when house; 2LZ finished the garage and now started the house; the YF was very surprised didn't think the OM would ever make a builder. OTS remember to build a Queen Mary chair, needs a few feet long! 2PZ doing a little on 7 Mc. SHZ still busy on the shack between planting spuds. SEX still working in the garden too, would like to get on 10 again and annoy the Ws during the day.

SOUTH COAST AND SOUTHERN

Mr. Reg George, associate member of Cooma, has forwarded along notes for this edition. Within two days of the broadcast of 2YU, Reg realised that associate members could help the zone officer in collecting notes. We had a letter from Reg offering a helping hand. 2AEP active on 40, having a varn over the back fence with 2TH and 2BT in Forbes. Much discussion on double coils, 1010, 1012, 1013, 1014, etc. See Bill, the 1013 must have been altered if it had a 676 in it. 2AEL doing a spot on 40, excellent sig seems to be going places. 2PZ active on 40 and 20. Les has worked a KRT on 20. Believe it or not, the band is the dimension between 2TH and 2PM—what band follows? 1014 2RM heard on 40 running 100 watts, 8 meter report won't go round more than twice Harry. "Tis reported the speech quality is very good—guess you must have put some granules in the mike.

2YU burning holes in 40, hard working North Coast stations; little bird tells me your YF won't allow QSL cards to be mailed, the postage doesn't. Well, Jack, you can go with nice signs from n.f.m.—very pleasing quality. ZAOX laying down swell signal on 40 and has some QSOs on 20; rig has been re-built. 2DY, President of the Gong Club, is active under his own call. The XYL *

quickly adapting herself to the Ham bands and was heard yearning to her heart's content. 2AER and 2DV are still working on illegal transmitter etc. on our QSO, but things are improving themselves out to their satisfaction. 2AMW and 2WP also putting forth mighty signals; Bill uses the e.w. to raise DX on 40. Only Wagga station heard, struck some heavy QSOs, but not enough to believe that it is 2GP. NII from 2Q9, believe he will be moving to Junee at the end of November. 2ADX active on 80. 2ALS has acquired a Rx bearing the mark SX28, 15 tups no less and all the refinements. A great improvement was made when an extra r.f. stage was added to the ARB, an 1852. 2DQ made a comeback on 40 and had a few words with the boys during a home-to-lunch session.

VICTORIA

The November monthly meeting was held at the Radio School, Bowen St., Melbourne, on Wednesday, 1st November. The attendance was good despite the inclement weather, there being approximately 150 members present. The President (368) occupied the chair and declared the meeting open at 2000 hours. The usual minutes were read and confirmed and then the President called on the guest speaker of the evening, Len Goss, to speak on the ever-absorbing subject—antennae. Len opened his remarks with a brief description of a simple dipole and then proceeded through all types of aerials, right up to the series phased arrays. Numerous questions were fired at Len and the President had to call time, so as to get the rest of the business finished.

A short interval was taken and upon resumption of the meeting the usual reports were given. The most important item was the 23rd Anniversary celebration arrangements. By popular demand appears in print the celebrations will be held on the 1st December. The Secretary reminded members that agenda items for the next Federal Convention should be sent in by the December meeting. The Treasurer's report, and the financial statement of the division, were read at the end of the meeting. After a few more items of business, the President closed the meeting at 2220 hours.

2ARA and 2YS look very fit after their holiday in the S.I.D. still worried about his 955 SHM very busy with exams. SLP had trouble with one of his poles, it crashed; George now QRP. 3DY nearly got strangled when his sky wire came down. SHZ very QRL with DX C.C. claims. 3KE trap-

ELECTRONIC A & R EQUIPMENT

A & R Transformers and Reactors

ELECTRONIC A & R EQUIPMENT

- Since the acquisition of new premises early this year the productivity of our factory is steadily increasing and the requirements of more and more Hams can now be met. Arrangements are being made to ensure that A. & R. Products will be readily obtainable in all capital cities. The increased output of our factory has been coupled with the consistent high quality of all A. & R. Products.
- Whatever the requirements may be—Power Transformers, Chokes, Audio Transformers, or Modulation Equipment—a large range of these items are being manufactured to meet the demands of the discriminating Ham who wants the best possible results from his rig. A. & R. Equipment has been developed with that end in view, to produce high quality products at competitive prices. When purchasing Transformers, think of the best value and insist on A. & R.

REMEMBER . . . GOOD TRANSFORMERS MAKE GOOD EQUIPMENT

A. & R. Products available from—Melbourne: Wm. Willis & Company, J. H. McGrath & Company, Homecrafts Pty. Ltd.; Adelaide: Gerard & Goodman Ltd.; Perth: A. J. Wyle Pty. Ltd.; Hobart: A. H. Gibson Electrical (Tas.) Pty. Ltd.

A. & R. Electronic Equipment Co. Pty. Ltd.
378 ST. KILDA ROAD, MELBOURNE, S.C.1

Phones: MX 1159, MX 1150

you know that 4IN, now in Brisbane, is ex-G3CUD? Believe Fred is mainly on 40 metres. It was nice to see 4RQ of Longreach at the last meeting as a visitor. 4RT now sports a four element beam, while 4WV has just got to grips with a new DX now; as a matter of fact I haven't yet heard John on the 20 metre band, which reminds me I often wonder what has become of my old pal, 4GJ—haven't heard him for months.

4UX is contesting, installing a voice-operated transmitter control to operate after a delay of four seconds, but 4WG reckons that Claude's transmitter will never go off the air in that case. I wonder what made 4WG suddenly decide to go on the air again. Perhaps the novelty of a new car is starting to wear off.

How on earth 4AH gets into all the strife he does and comes out laughing I'll never know. His latest ploy is "the effect of electrical shock" when he was getting out the clothes. "Doc" investigated and thought it must have been some of the stay r.f. when he was transmitting—he also decided when he commenced to climb the tower to get the fault he had to leave a few earthwires and back-flips. It appears that "Doc's" beam is rotated with an electric motor and, in keeping with modern trends, has a 240 volt a.c. motor driven from the 220 v. mains. Naturally he has to get the juice up to it via wires, so you can have guessed it, the wires shorted during a wind (didn't blow the fuses—must be metal) and touched the tower (can't be earthed). The latter is of metal construction, but the clothes line which is attached to it would have been fitted with lethal weapons. Hope you can make sense of all the above, but it may serve as a warning of what might have happened.

"CLARE'S CORNER"

4UX is back on the air again chasing the DX after a complete re-build; Claude is also the proud owner of a Hammarlund 8XN, and has built himself a new receiver while from all accounts it is super-duper. 4MD not active lately owing to proximity of examinations; best of luck Mick and no doubt you will make it up for it when they are all over. 4WV is still on 4WZ, as usual; hope it is the lounge suite or the 86ds Noel?

4CC is quite a picture-goer, but I very much doubt if his wife will be able to drag him along to see "Gone With The Wind". Since I've put him up, he has had a little social about and even took some photographs before putting it on the pole. Anyway it is still up and doing a good job.—Clare. (4FP must have been worried too—

he arrived at my place with four bags of cement for the guy wire posts—gratia. Thanks Jack—Sub-Editor.)

DARLING DOWNS ZONE

Zee assesses for the past month have been just the usual run-of-the-mill affairs with one chap working the other for absolutely no reason at all. Conditions generally have improved, particularly on 7 Mc., where the band has been exceptionally good at times with a variety of summer conditions. Some excellent signals have been heard.

4IG and 4JC have been getting out very nicely with creditable phone signals for newcomers to the Ham ranks. Often think it's queer that 30 metres has been standard for the last few years. The Five Fingers (the "little ones") have been playing around with 50 Mc. and 4GK has already QSO'd 4RK. Likewise 4KK and 4TY have had some contacts. 4CX, 4XN and 4RK have worked (sometimes daily) studs on the 14 MHz. band round 7.300 Mc. An amazing display of stamina for boys of their age. 9.30 a.m. is a nice time for breakfast in any home.

Lots of nice DX coming through on 14 Mc. late at night—midnight on European in some cases. Australia seems to be the same. We hear all Continents in the course of one swish round the band and all over 87. VIKING (ex-2PG) is on regularly around 1330 G.M.T. 14120-150 Kc. seems to be the best band for 28 watts on a thousand. Notice the local emergency net, flooding—some new ideas required along with a recasting of personnel and a change of policy with regard to equipment. The silly business of having to have portable sets will be stopped. A sensible policy prime mitigation for the benefit of the community—not the self glorification of the selected few.

TOWNSVILLE ZONE

4EJ not very active due to newly acquired best boy talking about installing glass insulators. 4LD fairly quiet, but 4MC, 4ME nice quality phone and nice clean e.w. 4GF often heard on 14 in the evening with a nice signal and fed. 4TJ good phone signals from Bill, seems to be 14 and 7 Mc. quite a lot and does well too; he put up a good score in the recent Rockhampton Contest.

4QL when not too busy writing DX notes, finds time to work a bit of DX on 14 Mc.; he also puts up a good score in the R.D. Contest. 4RX and with nice quality phone and fed. 4LH and 4P were very active on 14 Mc. and often heard knocking them over in the afternoons; heard doing well in the VK-ZL Contest. 4EL, well I have at last made my electronic bug and very pleased with it.

Still keep up my motto of "A European a Day" although it is generally a dozen. Still trying fixed arrays, Lazy II is the best with Collinear next.

SOUTH AUSTRALIA

The monthly general meeting for the VK5 Division took the form of a "Buy, Sell, or Swap" evening, and to say that it was a huge success could be classed as an understatement. Everybody could almost see the jinkies, as they called it, and everybody said in a very serious manner, "you don't catch me falling to any of that junk." Certainly they didn't fall for it; they crashed headlong into it. The associate members probably thought it was the privilege of bidding against each other and could easily imagine his bid another sixpence without anybody bidding against him. Anyway, it was a wonderful night, and the master of ceremonies, 5BY, did more than his duty in keeping the night moving. 5RF left the meeting loaded like a pack horse with all the radio gear in the world. One associate member had to hire a taxi to take all that he had bought, right up to his face as he proudly displayed his hauls making an odd sight. I wonder if he could re-capture the first flush of his enthusiasm for Amateur Radio. To sum it all up, we should have more of these nights.

That stork that was flying around Herley Beach last month apparently gets married before 800 because the proud father of a baby daughter a couple of days ago, although I have no particulars as yet. Congratulations Madge and Hughie. 5LW is another one who would not listen to my advice about that stork, so I tried to do a doggerel rhyme, and consequently it was attracted by his beam and pausing to see if it was a ten or twenty metre beam, the stork liked the look of the QTH, and to cut a long story short, Ross became the father of a baby girl. My daughter rang him up to find out all the particulars, and he said that the little darling's name was Bronwyn.

By the time these notes are getting ready for print, 600 will be getting ready to say "yes". Best of luck to all the brides and I hope it will be a piece of wedding cake to put under my pillow so as I can dream of my past. You beaut!!

Every month or so I do a bit of a winge about the arrival of Amateur Notes, how difficult it is to find enough to fill these notes. Except for a few old reliable who send in some notes regularly, I am forced to work on my imagination quite a lot. Now what about us fellows, it is a lot easier to write facts than to think a lot of fiction, and even

Setting a New Standard in Communication Receivers—

The "Commander" Double Superhet.

Free Data Sheets on Request

Interstate Representatives: West. Aust.—Messrs. Atkins (W.A.) Ltd., 894 Hay St., Perth. Queensland—Messrs. A. E. Harrold, 123-5 Charlotte St., Brisbane. In other States direct your inquiries to firms handling Bright Star Crystals.



Valves, new, boxed, RCA 834s, £1/8/- each.

Limited number of the following Taylor Tubes: TZ20s, £2/10/- each; TB35s, £6/10/- each.

Transmitters altered for Bush Fire and Fishing Boat Work.

CRYSTALS, as illustrated, 40 or 80 mx., AT or BT cut. Accuracy 0.02% of your specified frequency, £2/12/6 each.

20 metre Zero Drift, £5 each.

Large, unmounted, 40 or 80 metre, £2 each.

Special and Commercial Crystals—Prices on application. Crystals re-ground, £1 each.

BRIGHT STAR CRYSTALS may be obtained from the following Interstate firms: Messrs. A. E. Harrold, 123 Charlotte St., Brisbane; A. G. Healing Ltd., 151 Pirie St., Adelaide; Atkins (W.A.) Ltd., 894 Hay St., Perth; Lawrence & Hanson Electrical Pty. Ltd., 120 Collins St., Hobart; Collins Radio, 409 Lonsdale St., Melbourne; Prices Radio, 5-6 Angel Place, Sydney.

A.W.A. Split Stator Transmitting Condensers, high voltage, £2/15/- each.

Screw-type Neutralising Condensers (National type), suits all triode tubes, Polystyrene insulation, 19/6 ea. Prompt delivery on all Country and Interstate Orders.

Satisfaction Guaranteed.

BRIGHT STAR RADIO

1839 LOWER MALVERN ROAD, GLEN IRIS, VIC. Phone: UL 5510.

If you only know one little item of interest, Don't be frightened that I will give my source of information away because my journalistic ethics wouldn't let me. The train strike is apparently the cause of the delay of the "mag." this month. I did not realize that it was as popular as it is. I have counted up the number of subscribers that I and other members of the Council have had concerning the lateness of the delivery, well I was amazed. This is all to the good, as I can remember quite well when the same "mag." wouldn't have been delivered if it had not been taken up.

I noticed in the last issue of the "mag." that Bob Pease (SRL) has now cancelled his license. I should say that his duties as Chief Engineer of broadcasting station 5KA give him all the radio that he requires, but one thing I am sure of is that he will never forget the lessons he learned from Amateur Radio, nor the opportunities for amateur training that it gave him. Sorry that you are throwing the towel in Bob, but I understand.

Ban Latte (SRL) writes from Durban, to say

Ray Latte (5RA) writes from Darwin to say that at one of the meetings of the Far Northern Radio Association, a visit from 5RA was making a flying visit to the Territories in the capacity of Radio Inspector. Johnny, in the capacity of a Radio Ham gave them a very interesting talk and answered many questions put to him by the members. He also had time to speak to many people who are at present studying for their tickets. Between you and I, this has always been a habit of this gentleman, and many a raw beginner can remember Johnny's little word of encouragement or advice when he was learning the Q signals and how to pass the Morse code exam. That he keeps his parents' family history and other memorabilia, Yes I know what you are saying, I'll get on, but all jokes aside, he did as much or more than any VK5 Amateur, to put Amateur Radio and the W.L.A. back into public notice at the conclusion of the John Egan (5RA) with 4WCA

last war. John Emslie (DAS) and his wife (OCV) are at the moment of writing both down South and it is very uncertain as to when they will be back. John is the Chairman and his wife the Secretary, of the above-mentioned Far Northern Zone.

SSA has at last left for the City of Churches and his QTH is Enfield. How about coming along to the meeting one night Bill? 5EB is operating under difficulties at the moment due to an unsympathetic hostel manager who does not like rotary beams and antenna cluttering up the landscape. Keith, how-

and some chartering up the landscape. Keith, a son of DX just the same, 5B 2 has been in hospital with a broken collar bone as a result of a motor bike accident; he came out for a while, but had to go back again for more treatment. But lucky, Roy here's been doing well, and the group have formed with ERA as chairman in an endeavour to foster interest in 5C Mc. and Ray would be pleased to hear from any of the Northern Territory boys who may be interested, and Ray also said that if it is on 8 MC, perhaps that he will be able to get them in touch with him so as to pick up quite a few of these at a recent disposals sale. What more do you want? A potential QRK maker, Ted Fuller, is still anxious awaiting his call sign, but we believe that the holdup is due to a technicality in his application. The new 5A 12 have just got around those daughters and Ham Radio has suffered somewhat in consequence, there is no such thing as stale news Ray.

If I was comered, I would be the first to admit that I have done some "little crowling" in my time, but I don't think that I have ever done it in an ex-G station apparently has. I heard with my own ears on twenty c.w. the other late afternoon, a G station who is an ex-B.R.S., say to 5MD, "I am sorry, Doc, you won't be able to land me, I am going to take my landlord's little daughter for a motor car ride in a few moments." Well I ask you, could any one sink lower, no wonder they live in the basement of the police rooms if he can use. Naturally I won't mention his name, but I believe that Ross Adry was capable of such tactics, still, as I have been told, one never knows about little crowling.

The danger period for executive officers of the VRS Council seems to have passed, as both the President and the Secretary are now well on the road to perfect health and have resumed duties. They both had bad times and we are pleased to get them back to Amateur Radio but it will not be getting much time for Amateur Radio but always managed to keep his schedules on 144 Mc. Claude has had quite a long spell of weekend work at the station and has been doing a good job. He is last coming to an end. 5M5 has just recovered from a beautiful dose of the "flu" (he didn't call it beautiful) and also, Stewart has had his 20 metre band down for a few minutes. It is now back up. T-100K is still being repaired to 144 Mc. Peter has all the necessary approvals for operating from his new location and although he has had no contacts as yet on the v.h.f. he will be on 10 meters, 20 meters and 40 meters. Jim, K9JL, though, hasn't been managing a few stations on

5FD has been in the news this month if not on the air. John put the best broadcasting station in the south east off the air the other night when he moved one of the high tension poles out of position with his truck. No serious damage to anybody other than the pole. Listen Col, you got away with the preceding paragraph regarding the President, but I can't let that pass concerning the best broadcasting station. Take ten years' notice.

5KU is now operating with the long awaited AC from his new home and is very pleased with everybody and everything. Eng is on 20 and 40 metres, 5CJ occasionally is to be heard on 40 and 2 metres, but Col is apparently becoming busier and busier, judging by his declining activity in Amateur Radio. Thanks for the notes Col, 5AKK, 5CH and 5CJ strained their ears listening for 5AKK and the Geelong V.H.F. gang going on 15th October, but heard nothing that could be identified.

There is no doubt about it, if one cares to listen on 20, one can quite often hear a few things about himself, and tonight I heard VR8RJ, an ex-VR
tel SWL who was always possible to keep a check on Ross' skullduggery by reading Pines notes. Wouldn't it? By the way, this Fanes business is only a joke you know, so the joke that sent me a letter addressed to Fanes Parsons, would he please note.

Two months ago today I wrote in these notes that STW would be making his own fireworks this year, but if my information is correct (and it was given to me by a female eye name Mata Hari), he was very well impressed this year. The *QTE* of Falstaff's party was certainly held this year. The *QTE* of Ralph, and one of the guests, 5LW, certainly did arrive home at the obnoxious hour of 3 a.m., but no mention has been made of any home made crackers, or any other such pyrotechnics. I am sure that STW, however, had definitely did not intend fireworks, but now, I wonder, why? Just anyone could begin

Talking of female spies. If any of my XYL readers would like to let me in on a few secrets of their OMs, I could use them. Now here's your chance girls, some of those things that he does that annoy you so much and yet you don't like his feelings. Just write it to me and I will keep it well known. What has happened makes the train blows the whistle. You may trust me implicitly my dears, I close these notes this month with a query. What has become of SHBY? I miss his cheery voice on 20. Are you there? Charlie

FIELD DAY AT KULPARA

A successful Field Day was held by the V.R.S. Northern Network at Kilpurne on 29th October. All are indebted to V.R.S.U.K. for the following details of the proceedings which were as follows:-
66 people-Hams included 5DR (Kingscote Is.); GCV (Balaklava); SVM (Crystal Brook); SWX (Peterborough); SSO, 5EN (SKS (Port Pirie)); SWX (Laura); SWX (Wynella); 5CL (Clare); 5DP (Laura); 5JN (Maclellan); 5GF (Adelaide); 5JL (Maclellan) successfully representing the W.L.A. Local interest was aroused by announcements in local papers and over the ABC and brought non-

Photographs were taken by 5VM. A sack race and an ice-cream-licking competition was run for the children, while various contests, stage shows and the needed events were organised for the ladies. Mystery parcels for men and women caused some fun. For the men, SAX finally got what he insultingly called "A heap of junk" (so it was, but he had called it "A heap of electronic gear"). The ladies, another lady and girl, were presented and BEFF walked off with three beautiful front-loading bras that I wanted.

5GF brought both 50 and 144 Mc. gear and contact with Adelaide (65 miles) was made on both bands with excellent signal strength. Joe McAlister had a 144 Mc. handle-talkie (he heard plenty of car ignition) and Clarice Castle (5KL) had an f.b. 50 Mc. converter pecking well. The Code Speed Contest was won by SWO at 25 w.p.m. with 5KL second. Some good home made gear was on display—the prize was won by 5KL with his 50 Mc. converter—a really fine piece of workmanship.

Conditions on lower frequencies were, unfortunately, not so good and despite many calls and much QRM, the results for both 20 and 40 m. were won by 50F on the v.h.f. bands. A "miles per watt" competition, run in conjunction with this contest, was also won by Max (5GF) who averaged 1.2 m.p.w. on 6 and 5 m.p.w. on 2 metres. Prize-giving and wind-up took place at 1800 hours to give long distance travellers a chance to get home at a reasonable hour.

The Northern Network are indebted to the following for their generous support in making the Field Day a real success: Newton McLaren Ltd., £2/2/-; Gerard & Goodman Ltd., £2/2/-; B.H.P. Co., Whyteleafe, £1/-; Phillips Electrical Engineers, an anonymous donor, £1/-; Oliver J. Niland & Co. Ltd., £1/1/-; Spencer Electric Wholesalers Ltd., 10/-; Mr. Peter Spencer of Whyalla, a half ball point pen; 5VM, 100W QSLs; GCE, three front-loading boxes. Our grateful thanks are also due to the members of the Association who gave their services for the success of the event.

WESTERN AUSTRALIA

The October meeting of this Division was held on Tuesday the 17th at the usual location, with an attendance slightly higher than the previous two meetings, which is very good sign. It was also very encouraging to see three new members admitted to the Institute, namely, older 61J (who came back to the old OMY), 6JA (Jack Cook), and SBA (Mr. B. Moore). Let us hope that your associations with the VK6 Division are long and happy ones, gentlemen.

There was one visitor present at the meeting, VK2STN, who was welcomed in the usual manner by the President, GKW. 2TN replied to the welcome in a very able, and at times, amusing manner. I especially liked the little anecdote about his visit to VK5. Apparently he was taken for a drive by one of the officials of that Division and was a little perturbed when the car drove up to a pair of communion looking glasses. He was asked if he wanted to enter the confessional and then bolted carefully after they had entered. "Don't worry," said his host, "this is just where I work." "There was a VK6 present there," announced 2TN all in innocence. Quick as a flash he added, "the one I worked for." "He was in and out," and in response to a query, "he was down here to Strange to relate 2TN didn't mention visiting any broadcasting stations whilst in VK5, however he returned East on the morning following the meeting, taking with him the good wishes of this Division to the N.S.W. fraternity.

Following the conclusion of the business for the evening, J.W. gave his contribution in the "My Station" series of lectures and made a very workman-like job of it too. Each section of the equipment was taken up in detail, and any unusual or unique design was dealt with in full detail. Two films followed through the courtesy of J.W. The second dealt with electron theory as applicable to vacuum and gaseous tubes and proved most instructive and interesting. Wish I could have seen it when I was studying for my ticket.

The meeting closed about 10:45 p.m. There will be no meeting of this Division in December. It would normally be held on the 19th and it was considered that this would be too close to Xmas. However the Council meeting will be held as usual in December.

PERSONALITIES

6EO makes headlines this month by being the first VK6 to operate on s.s.c. Nice work Eric. You may go to know just what is it you are emitting and can supply the receiving center with a stable local oscillator of some sort you should get plenty of QSOs, on anyway. 6WH is building another final for exclusive operation on 10 metres, the present one being retained for 40; a 1000 watt exciter and modulator will complete the set-up. 6WTA has his equipment from the air, is keeping his hand in building a dual conversion receiver. Next March or thereabouts Dave will be travelling East by car and working back to 6JA on the way over. 6DRA is another who is busy on an elaborate double conversion receiver, home is in sight.

You may have had a fortnight in hospital, but is back again pursuing his favorite pastime - shooting. Aiming apart the end of 20 metres so everything must be OK with Tom. 6JLJ and 6RS both busy with compass receivers as QSLers. Wonder who is going to be the first to have his operating 6GDV on the XYL line. No news from 6GK, he's been seriously ill.

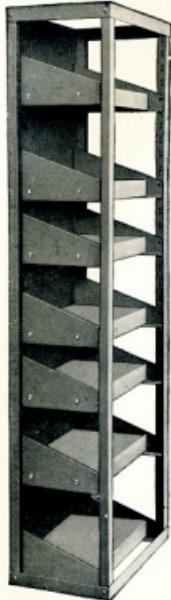
We all hope that Mrs. Geddes is completely recovered and that Horrie will be able to let up on the cooking and bottle washing. 6RW is now sporting a National NC200 and can be heard many evenings on 20 metre phone with very nice signal. Don't ask 6GA if his T40 can run 100 watts; if you don't, they're likely to collect a defunct 866.

Frank tells me he had to do a spot of lumberjacking before he could string up a sky wire and attract the attention of his six foot tree. GML and GNA are now 80 feet above ground, and the two birds are still perched on them. It looks as though their patience will soon be rewarded. Shouldn't be long before the first nest is built, and a half a dozen chicks hatch out. What's brewing out there in Shenton Park? GMU last heard of working on the Beaufort Peninsula, endeavouring to find a suitable nesting site. They were working on 40 miles N.E. of Etawa, from 9.5W to the 10th meridian.

卷之三

TASMANIA

EDDYSTONE EQUIPMENT RACKS



The complete assembly comprises four uprights, top and bottom frames, top plate, front panels of various depths, side brackets, and the requisite number of chassis. The construction throughout is of mild steel and holes have been punched out in all members so that they clamp together easily by means of 1/4" B.S.F. bolts, which can be supplied. The uprights are channelled, to give additional strength, and up to ten chassis may be fitted in any one rack. The panels are finished ripple black and the other parts glossy black.

The dimensions, which conform to International standards, are as follows:—

Chassis	17½" long, 30" wide, 2" deep.
Panels	19½", 21½", 31½", 7", 8½" or 10½" deep.
Angle Brackets	12½" long.
Uprights	63½" long.

Cat. No. 615—Pair of Front Vertical Channels.	Cat. No. 618—Pair of Angle Brackets.
Cat. No. 642—Pair of Rear Vertical Channels.	Cat. No. 622—3½" Panel.
Cat. No. 617—Standard Chassis.	Cat. No. 621—7" Panel.
Cat. No. 616—Pair of Frames (top and bottom).	Cat. No. 620—8½" Panel.
Cat. No. 636—Top Plate.	Cat. No. 619—10½" Panel.

We are also able to offer a HALF SIZE RACK, which will be found useful where the full size rack is too large. No top frame or rear channels are necessary with the smaller assembly, which is listed both as a complete combination and separately. The short rack can be easily extended when desired by using a pair of Junction Pieces (Cat. No. 748) and an additional pair of Vertical Channels (Cat. No. 746).

Cat. No. 745—Bottom Frame.
 Cat. No. 746—Pair of Short (3½") Vertical Channels.
 Cat. No. 747—Pair of Tie-Bars.
 Cat. No. 748—Pair of Junction Pieces.
 Cat. No. 743—Half-Size Equipment Rack, comprises: pair of Channels (Cat. No. 746), pair of Tie-Bars (Cat. No. 747), Bottom Frame (Cat. No. 745), and Fixing Bolts.

WRITE YOUR NEAREST EDDYSTONE DISTRIBUTOR FOR A COPY OF THE LATEST ILLUSTRATED CATALOGUE.

Australian Representatives:

R. H. CUNNINGHAM PTY. LTD.
 62 Stanhope St., Malvern, Victoria (Phone: UY 6274)



Illustrating the Standard Chassis (Cat. No. 617) with Cat. No. 619 Panel and pair of No. 618 Angle Brackets.



- ★ The Ham specially catered for.
- ★ Quality Cards at economical prices.
- ★ Prompt Service.
- ★ One, two or three colours if required.
- ★ Interstate orders handled.

Dee Why Printing Works

67 HOWARD AVENUE, DEE WHY, SYDNEY.
 Telephone: XW 8367.

Proprietor: GEOFFREY BOWER

QSL CARDS

The DEE WHY PRINTING WORKS is making available to the Amateur Experimenter a Special QSL Card Printing Service. Knowing the requirements of Hams, we are confident the service offered will be unsurpassed in Australia.

Cards can be printed to your own specifications, and if illustrations or blocks are necessary, our Art Department can produce these for you.



AEGIS KC4
Four-Band
Tuning
Unit

The most advanced
COIL ASSEMBLY
 ever offered in
 AUSTRALIA

Heres something for
 the **EXPERTS**

The new Aegis 4-band, bandspread tuning unit illustrated at the right is definitely the answer for the Amateur who desires to build his own four-band communication receiver. Here are the plain facts of this latest Aegis triumph:

4 Wave Bands	Band-Spread—5 Bands
550 Kc. — 1500 Kc.	3.5 — 4.0 Mc. 80 Metres
1500 Kc. — 4 Mc.	6.9 — 7.3 Mc. 40 Metres
4 Mc. — 31 Mc.	14.0 — 14.5 Mc. 20 Metres
11 Mc. — 30 Mc.	20.0 — 20.5 Mc. 15 Metres
	27.0 — 30.0 Mc. 10 Metres

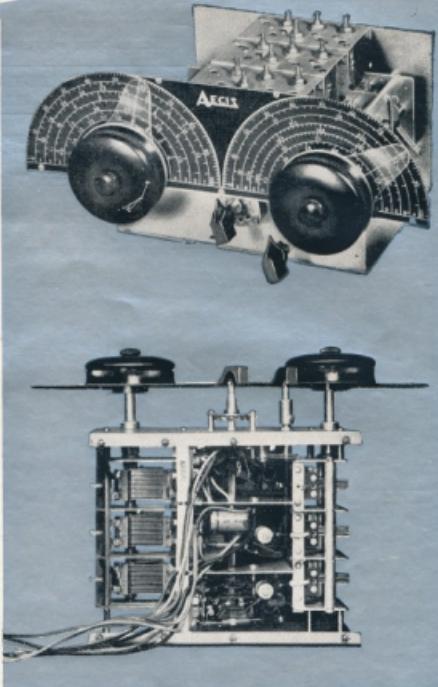
Actually constructed in three sub-sections comprising R.F., Converter and Oscillator stages. Finally assembled in one unit, which incorporates Band-Ster and Band-Spread Condensers, together with two Slow Motion Drive Assemblies (55TGT), a direct drive calibrator (55K7GT), a slow motion drive (6SK7GT), Mixer (6AC7), and separate Oscillator (6SK7GT) stages, and already wired. Concentric air trimmers are used throughout, and the six section "Oak" Type Switch includes shorting contacts for all coils not in use. Aerial Trimmer is brought out to front panel with a 1-inch shaft. Scratches from construction work, all parts are readily accessible from top of unit, as are also the Trimmer Screws.

For use with the KC4, we recommend Aegis L.F.T. Type Nos. J22 and J23, specifically designed for communication work. A complete set of blueprints for connecting this unit plus a most comprehensive Communication Receiver Circuit are supplied with each Kit.

See your distributor right away for your
 Aegis KC4 Coil Assembly.

AEGIS

MANUFACTURING CO. PTY. LTD.
 208 LIT. LONSDALE ST. MELB.
 PHONE CENT 4414.5171



DISTRIBUTORS IN ALL STATES

MELBOURNE:
 Lawrence and Hanson Electrical Pty. Ltd.
 Replacement Parts Pty. Ltd.
 Vesti Electrical and Radio Pty. Ltd.
 Homecrafts Pty. Ltd.
 J. H. Magrath & Co.

SYDNEY:
 John Martin Pty. Ltd.
 George Brown & Co. Pty. Ltd.
 Fox & Macgillycuddy Ltd.
 Cook Bros. Pty. Ltd.

ADELAIDE:
 George Procter (Factory Rep.-representative).
 Norton, McLaren Ltd.
 A. G. Harting Ltd.
 Harris, Scarfe Ltd.
 Oliver J. Nilsen & Co. Ltd.
 Gerard & Goodman Ltd.

BRISBANE:
 Chandlers Pty. Ltd.
 A. E. Harrold Pty. Ltd.
 B. Martin Pty. Ltd.
 Nicholsons Ltd.

TASMANIA:
 Lawrence and Hanson Electrical Pty. Ltd. (Hobart).
 Lawrence and Hanson Electrical Pty. Ltd. (Launceston).